

Exhibit 16

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UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

CIVIL ACTION

ASSOCIATION OF NEW JERSEY) No. 3:18-10507
RIFLE & PISTOL CLUBS, INC.,) (PSG)(LGH)
et al.,)
Plaintiffs)
vs.)
MATTHEW J. PLATKIN, et al.,)
Defendants)

MARK CHEESEMAN, et al.,) No. 1:22-4360
Plaintiffs) (RMB)(LHG)
vs.)
MATTHEW J. PLATKIN, et al.,)
Defendants)

BLAKE ELLMAN, et al.,) No. 3:22-4397
Plaintiffs) (PGS)(LHG)
vs.)
MATTHEW J. PLATKIN, et al.,)
Defendants)

DEPOSITION OF EMANUEL KAPELSOHN
Taken in the offices of Veritext Legal
Solutions, 5100 Tilghman Street, Suite 205,
Allentown, on Friday, August 4, 2023, commencing
at 10:00 a.m., by Leandra M. Stoudt, RPR, CBC,
CCP, CRR, Notary Public.

1 APPEARANCES: (All appearing remotely)

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1 (It is stipulated by and between
2 counsel for the respective parties that all
3 objections except as to the form of the question
4 are reserved until the time of trial.)

5 EMANUEL KAPELSOHN, having been duly
6 sworn, was examined and testified as follows:

7 * * *

8 EXAMINATION

9 BY MR. VANNELLA:

10 Q. Good morning. Please state your full
11 name and address for the record.

12 A. Emmanuel Kapelsohn, 1771 Creek View
13 Drive, Fogelsville, Pennsylvania, 18051.

14 Q. Good morning, Mr. Kapelsohn. My name
15 is Dan Vannella and I'm an Assistant Attorney
16 General for the State of New Jersey. We are here
17 today in the matters of association of New Jersey
18 Rifle & Pistol Clubs versus Platkin, and Ellman
19 versus Platkin, which are consolidate along with
20 the matter of Cheeseman versus Platkin.

21 Among all of those matters, I
22 represent Defendants Attorney General of New
23 Jersey and Superintendent of New Jersey State
24 Police. And then in the Cheeseman matter, I also
25 represent the Camden County Prosecutor and the

1 Ocean County Prosecutor.

2 The NJ Rifle case is -- in New Jersey
3 --

4 THE COURT REPORTER: You were
5 breaking up and you froze.

6 MR. VANNELLA: The NJ Rifle case is
7 challenging New Jersey's regulation of large
8 capacity magazines. And the Ellman case, as well
9 as the Cheeseman case are challenging New Jersey's
10 regulation of assault firearms. We're here today
11 for your deposition. This is a virtual
12 deposition.

13 Now, you've had your deposition taken
14 before, correct?

15 A. Yes.

16 Q. So all the same, for the sake of the
17 record, I'm going to provide you with a few
18 instructions. If at any time during the
19 deposition you do not hear a question clearly,
20 please ask the court reporter to repeat it. If at
21 any time you do not understand my question, please
22 ask me to clarify it. If you answer a question,
23 it will be assumed that you understood it. If you
24 do not know or do not remember certain
25 information, please say so.

1 Please wait until I finish my
2 questions before you start answering. Please
3 convey all of your answers orally. The court
4 reporter cannot record facial expressions or
5 gestures. If at any time you need to take a
6 break, please let me know. All I ask is that we
7 take breaks after you finish answering the
8 question.

9 From the time you were sworn in until
10 the end of the deposition there is to be no
11 communications between yourself and your counsel
12 concerning the substance of this deposition unless
13 it relates to the assertion of a privilege, a
14 right to confidentiality or a limitation pursuant
15 to previously entered Court Order.

16 Do you understand all of these
17 instructions?

18 A. I think so.

19 Q. Is there any reason why you cannot
20 give accurate testimony today, that you are aware
21 of?

22 A. No.

23 Q. Now, Mr. Kapelsohn, you stated that
24 you have had your deposition taken before. Is it
25 correct that you previously had your deposition

1 taken in 2021 in the matter of James Miller versus
2 California Attorney General?

3 A. I don't remember that specifically.
4 I remember testifying in that case, both in person
5 and remotely.

6 I'm not sure I recall my deposition
7 taken. I'm not saying it wasn't. I just don't
8 recall it. And I certainly don't recall what year
9 it was in.

10 Q. Okay. I would like to show you what
11 has been marked for this deposition as Exhibit
12 Kapelsohn 6. I'm going to try to share it on my
13 screen now.

14 (Exhibit Kapelsohn 6 was marked for
15 identification.)

16 A. Can we pull this closer to me? I can
17 see it up on the screen, yes.

18 Q. Okay. Reading the first page, does
19 that refresh your recollection as to whether you
20 had your deposition taken in the Miller versus
21 California Attorney General matter?

22 A. I won't say it refreshes my
23 recollection. But it certainly does look like I
24 gave a deposition in that case.

25 Q. Do you recall having your deposition

1 taken in any prior matter?

2 A. Oh, I recall having my depositions
3 taken in many, many prior matters.

4 Q. In any of those prior matters, did
5 the matter concern a challenge to a law based on
6 the second amendment?

7 A. I can't recall that specifically, one
8 way or another.

9 Q. Have you given -- let me rephrase.
10 Do you recall giving testimony in the
11 Miller versus California Attorney General matter?
12 Do you recall testimony in court or otherwise
13 before a judge in that matter?

14 A. Yes. Both in person, in California
15 in court, and in front of Judge Benitez. And then
16 my cross-examination, I believe it was, was taken
17 remotely because of the COVID situation.

18 Q. In that matter, am I correct,
19 concerned a challenge to a law based on the Second
20 Amendment.

21 A. Yes, I believe so.

22 Q. Other than that case, were there any
23 other matters in which you testified in court
24 where the matter concerned a challenge to a law
25 based on the Second Amendment?

1 A. I think I already answered this. I
2 said I cannot recall that for sure one way or the
3 other.

4 Q. My question to you before was about
5 deposition testimony. Do you understand the
6 difference between a deposition and an in-court
7 testimony?

8 A. Oh, yes. I do.

9 Q. My question now is, do you recall any
10 other matters that you testified in court or
11 virtually before a judge in a -- where the law --
12 where the challenge was to a law based on the
13 Second Amendment?

14 A. I can't recall that for sure one way
15 or another.

16 Q. Now, Mr. Kapelsohn, it has been
17 represented to me by my opposing counsel that you
18 have been retained as an expert specifically in
19 the NJ litigation and Ellman litigation, but not
20 the Cheeseman litigation. Is that your
21 understanding, as well?

22 A. Yes, it is.

23 Q. Did you speak with anyone in
24 preparation for your deposition today?

25 A. Yes.

1 Q. Did you speak with Mr. Schmutter?

2 A. I did.

3 Q. Did you speak with any of The
4 Plaintiffs in the New Jersey Rifle or Ellman or
5 Cheeseman litigations?

6 A. No.

7 Q. Are you familiar with Ashley
8 Hlevinsky? H-L-E-V-I-N-S-K-Y.

9 A. I'm aware of who she is. I don't
10 think I've ever met her personally.

11 Q. So you've also never spoken to her in
12 preparation for your deposition today?

13 A. That's correct.

14 Q. Are you familiar with Clayton Cramer?
15 C-R-A-M-E-R.

16 A. I'm aware of who Clayton Cramer is.

17 Q. And did you speak with him in
18 preparation for this deposition today?

19 A. No.

20 Q. When did your meeting with
21 Mr. Schmutter occur?

22 A. I did not have a meeting with
23 Mr. Schmutter. I've never met him in person.

24 VERITEXT REPRESENTATIVE: Excuse me.

25 Q. Did you not -- I'm sorry. I thought

1 you said before --

2 THE WITNESS: Hold on. Hold on.

3 There's someone from this office wanting to
4 interrupt us.

5 (Discussion held off the record.)

6 MR. SCHMUTTER: Dan, to clarify two
7 things. One, we're requesting under rule 30E the
8 right to review the transcript and making
9 corrections, if appropriate. And number two, I
10 know you made reference to NJ Rifle. I just want
11 to clarify that, I assume you're talking about The
12 Association of New Jersey Rifle & Pistol Clubs
13 versus Platkin, that's when you say NJ Rifle. Is
14 that correct?

15 MR. VANNELLA: That's correct.

16 MR. SCHMUTTER: Okay. Thank you.
17 Sorry about that.

18 BY MR. VANNELLA:

19 Q. Did you speak with Mr. Schmutter
20 prior to your deposition in preparation for your
21 deposition today?

22 A. I did.

23 Q. And when did that meeting occur?

24 A. I had no meeting with Mr. Schmutter.
25 I never met Mr. Schmutter in person, ever.

1 Q. When did you speak with him on the
2 phone?

3 A. I spoke with him yesterday, briefly
4 on the phone in preparation for my deposition.
5 And a little bit longer the day before yesterday
6 on the phone.

7 Q. Did you review any documents in
8 preparation for this deposition today?

9 A. I have.

10 Q. What documents were those?

11 A. I reviewed my initial report dated
12 June 15th, 2023. I reviewed my reply report dated
13 July 17, 2023. I reviewed my supplementary
14 letter, dated July 31, 2023. I reviewed, to some
15 extent, exhibits to all of those documents. I
16 looked at my fee schedule that I believe was
17 provided to you and my list of testimony that was
18 provided to you. And I reviewed the declaration
19 that I provided several years ago in the Miller
20 versus Becerra case.

21 Q. Are there any other documents you
22 reviewed?

23 A. Not -- not that I can think of. I
24 believe that's all of them.

25 Q. Did you bring any documents with you

1 to this deposition?

2 A. Yes.

3 Q. And what are those?

4 A. It would be all of those documents
5 that I just listed, plus my curriculum vitae.

6 (Exhibit Kapelsohn 1 was marked for
7 identification.)

8 Q. Mr. Kapelsohn, I want to direct your
9 attention to what has been marked Exhibit
10 Kapelsohn 1 for this deposition, which was
11 provided to me by Mr. Schmutter. If you're able
12 to, open it up on the ipod or the iPad that the
13 court reporter has.

14 I would ask you to quickly review it
15 and confirm my understanding that this is a
16 complete and correct version of your June 15th,
17 2023 report including all of the exhibits that you
18 attached to it for this matter.

19 MR. SCHMUTTER: I want to understand
20 what you're asking. Are you asking to verify that
21 it's an exact copy?

22 MR. VANNELLA: That it's a true and
23 accurate version of his expert report.

24 MR. SCHMUTTER: Okay. Thank you.

25 THE WITNESS: I have to say that a

1 moment ago I testified that I thought I had with
2 me all of the exhibits for -- well, I don't know
3 if I said I had the exhibits with me or not. But
4 I don't seem to have the exhibits here for my June
5 15th report. Maybe I have them in my backpack.
6 Hold on a second. Now I'm going through what's on
7 the iPad to see if it appears to be a complete
8 copy of my June 15, 2023 report.

9 I've scanned through it. I have not
10 obviously stopped to read every page. It's many
11 pages. It does appear to be a complete copy of my
12 June 15th report with its exhibits.

13 BY MR. VANNELLA:

14 Q. Thank you. Now, one of the exhibits
15 that was attached to this report, which is labeled
16 in your report as Exhibit 1, appears to be your
17 CV. Is that correct?

18 A. It -- Exhibit 1 was my CV.

19 Q. And can you confirm that this is a
20 true and accurate version of your CV as of today?

21 A. Well, I'm going to have to look back
22 at it to do that. It appears to be, yes. I'm
23 looking at the last page. I'm not looking at all
24 the contents of it. It's 66 pages long. But,
25 looking at the last page, it seems to be a current

1 CV.

2 Q. Is there anything since you included
3 this CV with your report that has happened since
4 that would lead you to add or correct anything on
5 this CV?

6 A. No, I mean, I keep working all the
7 time. But there are no things beyond this CV that
8 I would think to add to the CV.

9 (Exhibit Kapelsohn 2 was marked for
10 identification.)

11 Q. Okay. I now want to direct your
12 attention to Exhibit Kapelsohn 2 marked for this
13 deposition, which also was provided to me by
14 Mr. Schmutter. And it appears to be a July 17th,
15 2023 rebuttal report written by you including
16 Exhibits 1 through 4.

17 A. What -- I'm sorry. What exhibit did
18 you say it was?

19 Q. Kapelsohn 2.

20 A. So it's not Exhibit 2, to my June
21 15th report, in other words?

22 Q. Kapelsohn 1 is the June 15th report,
23 correct?

24 A. Okay. Yes.

25 Q. And Kapelsohn -- I want to direct

1 your attention now to Kapelsohn 2.

2 A. Okay. The court reporter is
3 finding that for me. I've got it on the screen in
4 front of me.

5 Q. Is this a true and accurate copy of
6 your July 17th, 2023 rebuttal report submitted by
7 you in these matters?

8 A. So far I'm only able to see page one
9 of it. Maybe the court reporter can help me. The
10 next page I see appears to be blank. All the
11 other pages seem to be blank.

12 Q. Can we go off the record?

13 (Discussion held off the record.)

14 THE WITNESS: Go ahead, she says go
15 ahead.

16 (Exhibit Kapelsohn 4 was marked for
17 identification.)

18 BY MR. VANNELLA:

19 Q. Before you is what has been marked as
20 Exhibit Kapelsohn 4. It was also provided to me
21 by Mr. Schmutter. And it's entitled Emmanuel
22 Kapelsohn recent deposition and trial testimony.
23 Does this appear to be a true and accurate copy of
24 the document that you sent Mr. Schmutter?

25 A. Give me one second, please. Yes, it

1 does.

2 Q. And does this reflect all deposition
3 or trial testimony that you had completed since
4 2014?

5 A. I believe so. It's my best effort to
6 keep a list current. I may have missed something
7 here or there, but, my attempt is for it to be
8 complete, yes.

9 (Exhibit Kapelsohn 5 was marked for
10 identification.)

11 Q. I now also want to show you what has
12 been marked Exhibit Kapelsohn 5, which also was
13 provided to me by Mr. Schmutter. And it's titled,
14 fee schedule, the Peregrine Corporation, ANJRPC
15 cases. Is this a true and accurate copy of a
16 document that you gave Mr. Schmutter?

17 A. Yes, it is.

18 Q. And is the information contained on
19 this exhibit still accurate as of today?

20 (Exhibit Kapelsohn 3 was marked for
21 identification.)

22 A. Yes, it is. And the court reporter
23 notes for you that we now have Exhibit 3 up on the
24 screen of the ipad or whatever it is.

25 Q. Then let's go over that now. Before

1 you is Exhibit 3 -- Exhibit Kapelsohn 3, which was
2 provided to me by Mr. Schmutter. Is this a true
3 and accurate copy of the July 31st, 2023
4 supplement report that you provided Mr. Schmutter
5 in these matters?

6 (Discussion held off the record.)

7 THE WITNESS: You can go ahead any
8 time.

9 BY MR. VANNELLA:

10 Q. Okay. Mr. Kapelsohn, you are a
11 member of the Peregrine Corporation, correct?

12 A. I'm not sure what a member is. I'm
13 the sole shareholder of it and I'm its president.

14 Q. How long you have been president?

15 A. Since 1985.

16 Q. Currently, how many other employees
17 are there in this corporation other than yourself?

18 A. Two, part time.

19 Q. Now exhibit Kapelsohn 5 includes a
20 line item for paraprofessional assistance. Are
21 these other two employees paraprofessional
22 assistants?

23 A. At times they are, yes.

24 Q. What are they at other times?

25 A. Well, for instance, the two

1 paraprofessional assistants are my part-time
2 secretary, Jessica Miller and my wife. Many times
3 my wife is working for the corporation as its
4 bookkeeper or doing other things for which I don't
5 charge her time. I charge her time depending on
6 what she's doing. It may be chargeable in a
7 particular case.

8 Q. Between yourself and the other two
9 employees, are you the only one who provides
10 expert witness services?

11 A. Yes.

12 Q. So we went over three exhibits. Your
13 June 16th report, your fee schedule for Peregrine
14 Corporation and your list of cases that you
15 testified in. Other than those three items, what
16 else, if anything, did you produce to
17 Mr. Schmutter with the expectation that they would
18 be produced in this litigation?

19 A. First of all, did you say June 15th
20 or 16th?

21 Q. June 16th.

22 A. Well, the report I see here in front
23 of me is dated June 15th. I don't know whether --
24 whether the date was updated or not, but I believe
25 it to be June 15th.

1 Q. Well, then I will correct myself. I
2 received it on June 16th, I'll represent. But the
3 report itself may have been dated on June 15th.
4 So I will -- that is what I mean, by Exhibit
5 Kapelsohn --

6 A. Okay.

7 Q. Let me ask you this. Did you also
8 prepare a rebuttal report dated July 17th, 2023?

9 A. Yes, I -- it's entitled reply report.

10 Q. And did you also produce a report
11 dated July 31st, 2023 titled supplementary letter?

12 A. Correct. Yes, I did.

13 Q. Are there any other documents you
14 gave to Mr. Schmutter with the expectation it
15 would be produced in this litigation?

16 A. My CV, my list of testimony and my
17 fee schedule and the exhibits for those various
18 reports.

19 Q. Am I correct you're a licensed
20 attorney?

21 A. Yes.

22 A. In which jurisdictions are you
23 licensed to practice law?

24 A. I'm admitted to practice law, as it's
25 called, in the State of New York. I'm licensed to

1 practice law in the Commonwealth of Pennsylvania
2 and I've been admitted before various federal
3 courts and administrative courts.

4 Q. Out of any of the jurisdictions in
5 which you have ever been admitted, are you still
6 actively licensed to practice law in any of those
7 jurisdictions?

8 A. Yes.

9 Q. Which ones?

10 A. New York, Pennsylvania, possibly
11 before the various other courts. I don't know
12 what all of their rules are. But I would expect
13 I'm still capable of practicing law before other
14 courts before which I've been admitted in the
15 past.

16 Q. In what jurisdictions are you
17 currently engaged in the practice of law, if any?

18 A. Primarily Pennsylvania.

19 Q. Are you currently employed with a law
20 firm?

21 A. Yes.

22 Q. Is that the law firm Lesavoy Butz &
23 Seitz?

24 A. It's Lesavoy Butz & Seitz. Yes, it
25 is.

1 Q. Is this firm currently involved with
2 any active litigation matters in which the State
3 of New Jersey, including any of the state's
4 departments or employees, is also involved?

5 A. Not that I know of.

6 Q. Aside from your juris doctor degree,
7 do you have any other graduate degrees or special
8 licenses?

9 A. I'm not sure what you mean by special
10 licenses. I have a federal firearms license. I
11 have a class 3 license or it's sometimes called an
12 SOT, a special occupational tax license. I have
13 many certifications as an instructor of one thing
14 or another.

15 Q. All right. Well, let me just ask you
16 this, do you have any other graduate-level degrees
17 besides your juris doctor?

18 A. No.

19 Q. Now I previously asked you some
20 questions about the Peregrine Corporation. What
21 does your role as president entail?

22 A. Through Peregrine, I conduct firearms
23 and other use of force and security training
24 programs for police, security personnel, private
25 individuals, meaning not law enforcement

1 individuals.

2 I work as an expert witness. I
3 provide consulting services to corporations,
4 police, manufacturers of firearms and holsters and
5 other police products and related products. I do
6 some writing in the field. Many things relating
7 to the things I just discussed.

8 Q. And other than what you just
9 testified to, does Peregrine Corporation engage in
10 any other functions?

11 A. I'm sure it engages in many other
12 functions, but they're -- the primary ones are the
13 ones I've told you. So when I say it engages in
14 many other functions, through Peregrine and
15 Peregrine's federal firearms license, I receive
16 firearms for test and evaluation from
17 manufactures, from attorneys in cases that I'm
18 working in, from others.

19 When I'm done with those firearms,
20 they either need to be shipped back to
21 manufacturers or if they're not to be shipped
22 back, sometimes I sell them, Peregrine sells them,
23 I should say. That's an example of many other
24 tasks that are subordinate to or related to the
25 ones I've listed for you.

1 Q. Has any of your consulting or expert
2 witness's services related to your role in
3 Peregrine Corporation included matters related to
4 the Second Amendment of magazines?

5 A. Well, I testified in the Miller
6 versus Becerra case that you already asked me
7 about. So that's one that relates to the Second
8 Amendment. One reason I have trouble answering
9 your question or had trouble answering your
10 question about whether I've ever given a
11 deposition or provided testimony in any other
12 matter that involves the Second Amendment, is that
13 I worked as an expert witness now for about 39
14 years. So that's a -- quite a long time.

15 And I don't remember every single
16 case I've ever worked in or what all issues were
17 involved. Some of them were criminal matters.
18 Some of them were civil matters. I think there's
19 a possibility that some of the ones that were
20 criminal matters were cases in which the attorneys
21 for whom I worked or the attorneys against whom I
22 worked, raised Second Amendment issues. I don't
23 remember that now as a sit here today. It's
24 almost 40 years worth of work we're talking about.

25 Q. What about the last ten years?

1 A. Miller versus Becerra is the one I
2 remember besides these two cases. But, again, I
3 can't -- I can't say for sure.

4 Q. So do you remember, in the last ten
5 years, providing any sort of expert services
6 related to the Second Amendment and assault
7 weapons?

8 A. I don't remember.

9 MR. SCHMUTTER: Objection to form.
10 Objection to the term assault weapons, no
11 foundation.

12 BY MR. VANNELLA:

13 Q. All right. Mr. Kapelsohn, you
14 understand that these matters are challenging New
15 Jersey law, which defines in the law what the term
16 assault weapons means?

17 A. Yes.

18 MR. SCHMUTTER: Same objection.

19 A. I understand that. And to answer --

20 Q. So when I use the term assault
21 weapons, I'm referring to the firearms that are
22 defined as assault weapons under New Jersey law.

23 MR. SCHMUTTER: Objection. No
24 foundation.

25 A. I'm not sure I fully understand every

1 nuance and aspect of New Jersey law in that
2 regard. But to the extent that I understand it,
3 it includes many, many firearms that are commonly
4 used throughout the United States that either have
5 magazines holding more than ten rounds or have
6 pistol grips protruding below the bottom of the
7 action or have flash suppressers or whatever else.

8 And many, many of the cases I've
9 worked in have involved firearms of that sort,
10 whether they are raising Second Amendment claims
11 or not. But the way I understood your question
12 was asking me if I've ever, in the last ten years,
13 worked in any cases involving assault weapons as
14 New Jersey considers them to be. And I would
15 think I've worked in dozens of such cases over the
16 last ten years.

17 Q. But sitting here today, you cannot
18 recall any?

19 A. Oh, if I look at the -- if you want
20 me to look at the list of testimony, which is not
21 a list of all of my cases by any means, it's just
22 a list of those in which I've testified at trial
23 or hearing or by deposition. I'm sure I can name
24 some of them here that involved things that New
25 Jersey considers to be assault weapons.

1 As I look at the list, for instance,
2 the very second case on the list is Estate of
3 Schaffer versus City of Elgin. That's a U.S.
4 District Court case in Oregon. And the suspect in
5 that case, who was eventually killed by the
6 police, was using an AR-15-type rifle which New
7 Jersey would consider an assault weapon.

8 So that's one. And I can go down
9 this list. There are about 80 cases, I think, on
10 this list, 76, if I'm reading correctly, and pull
11 out ones that involve what New Jersey considers to
12 be assault weapons.

13 MR. SCHMUTTER: Just for the record.
14 I'm starting to see a little bit of freezing with
15 the Veritext link, the Zoom link, here and there.
16 Not egregious yet. Just a little bit of freezing
17 and a problem with the link.

18 BY MR. VANNELLA:

19 Q. Let me ask you this, Mr. Kapelsohn,
20 have you reviewed any New Jersey statutes in
21 preparation of your expert reports in this matter?

22 A. I looked at the New Jersey, I believe
23 it's called assault firearms law, if I'm getting
24 that title correctly. And primarily, the list of
25 prohibited firearms, which then are used as a

1 basis of saying -- and we also prohibit any other
2 firearms that are substantially similar to these.

3 So I reviewed the New Jersey law.
4 But in particular, that portion of it.

5 Q. If I were to represent to you that
6 that provision is N.J.S.A.2C:39-1W, do you have
7 any reason to disagree with that?

8 A. You seem like a truthful person. I'm
9 assuming your citation of the law is accurate. I
10 don't have it in front of me, nor do I have the
11 section numbers memorized. So I'll have to take
12 your word for it.

13 Q. Thank you. I'm trying to be a
14 truthful person when I can.

15 I want to move on. Other than the
16 Peregrine Corporation and the law firm that you
17 named, are you currently employed with any other
18 employer?

19 A. Well, that's a difficult question to
20 answer. I -- for instance, I am a special deputy
21 sheriff with the Berks County, Pennsylvania,
22 sheriff's office. That is an unpaid position.
23 Whether I'm considered an employee or not for
24 various other legal reasons or purposes, I don't
25 know. For instance, I was a reserved deputy

1 sheriff in Indiana, where we were all paid a
2 dollar a year for our volunteer work. And we were
3 considered employees. So I -- I don't know
4 whether the sheriff's department -- sheriff's
5 office considers me an employee or not.

6 I am on the board of directors of the
7 International Association Of Law Enforcement
8 Firearms Instructors. I've been on the board of
9 directors of that organization for over 35 years.
10 Whether that's considered employment or not, I
11 don't know. It's a nonprofit 501c3 organization.
12 I'm not paid for my work. I am compensated for
13 expenses in attending conferences and things like
14 that. Whether that makes me an employee or not, I
15 don't know.

16 Similarly, you know, I have some
17 other positions where I'm not paid but may receive
18 expenses. Whether that makes me an employee of
19 some other organization or not, I'm not sure. But
20 the Peregrine Corporation and my law firm are the
21 two that I would consider employment, paid
22 employment.

23 Q. Are those the only two where you
24 receive any -- any payment?

25 A. Well, I think I just explained that

1 in some of the other organizations I receive
2 reimbursement or stipends towards travel expenses
3 of attending functions or assisting with training
4 events or whatever. Whether that's considered --
5 whether you consider that payment or not or just
6 reimbursement, I don't know.

7 Q. Do you consider that payment?

8 A. It certainly is money from them to
9 me. Whether -- if you're asking me for a legal
10 opinion. I'm not here to provide that.

11 Q. Well, I'm glad you brought that up.
12 You are a licensed attorney and none of your
13 opinions offered in this matter are going to be
14 legal opinions. Do you agree?

15 A. That's correct.

16 Q. Okay. And if you don't understand,
17 as I instructed you at the beginning, as you're
18 aware as a lawyer. If you don't understand the
19 way I phrase a question, tell me and I will
20 clarify that if I can.

21 A. Well, then I would say I don't
22 understand the way you've phrased the last three
23 or four questions.

24 Q. In your CV you include a list of -- a
25 partial list of firearms related to publications.

1 Do any of these publications discuss
2 semi-automatic firearms?

3 A. Oh, yes. Many of them do, I'm sure.

4 Q. Do any -- you're sure?

5 A. I'm sure. I'm sure that many of them
6 do. Yes.

7 Q. How many?

8 A. Certainly can't tell you without
9 counting them. But if you want me to go through
10 my CV, I'll tell you which ones relate to
11 semi-automatic firearms.

12 A. Sitting here right now, you can't
13 identify any off the top of your head. Is what
14 you're saying?

15 A. Oh, I can probably try to. There's
16 --

17 Q. I don't want you to guess.

18 A. I'm not guessing, sir. I'm not
19 guessing. You're putting me to a test. So I'm
20 going to try to respond to your test.

21 I've written several articles about
22 Glock 17 pistols. Those are semi-automatic. I've
23 written several articles about Glock 19 pistols.
24 Those are semi-automatic. I'm written about the
25 Glock 10 millimeter pistol. That's a

1 semi-automatic. I've written articles about the
2 Colt HR rifle. That's a semi-automatic. I've
3 written articles about a semi-automatic shotgun.
4 Oh, let's see, what else? I've written articles
5 about transitional training from revolver to
6 semi-automatic pistol for police. That's an
7 article about semi-automatics. So, those are
8 some. I can keep going if you want me to.

9 Q. No, that is fine.

10 Did any these publications discussion
11 magazines?

12 A. Oh, I'm sure many of them discussed
13 magazines.

14 Q. So that's a yes?

15 A. Yes.

16 Q. On your CV you list the agencies you
17 have trained and the courses you have been
18 involved in. Did any of those courses or
19 trainings address assault firearms?

20 A. Well, if we're talking -- every time
21 we say assault firearms, if we can understand that
22 we're talking about what New Jersey calls assault
23 firearms, then, dozens and dozens of those
24 training programs include what New Jersey would
25 call assault firearms.

1 Q. And if I didn't make it already
2 clear, when I am going to use the term assault
3 firearms, I mean, the term as defined under New
4 Jersey law, which you said you had reviewed.

5 A. Yes, sir.

6 Q. Did any of those trainings or courses
7 address magazines?

8 A. Any course that involved
9 semi-automatic firearms, addressed magazines.
10 Many of -- many courses that I've taught that
11 involve other things, other than specifically
12 semi-automatic firearms, like fully automatic
13 firearms, also addressed magazines.

14 Courses I taught involving pump
15 action shotguns, involved magazines. So that many
16 of these courses involve magazines, yes, or
17 address, as you say, magazines.

18 Q. Have your qualifications as an expert
19 ever been rejected by a court in a litigation
20 matter which you were held out as an expert?

21 A. I can think of twice where I was not
22 permitted to testify. But I would not say that it
23 was because my qualifications were rejected. It
24 was for other reasons.

25 Q. What were those two matters?

1 A. One was a criminal case in York
2 County, Pennsylvania, some years ago, where I was
3 engaged by the public defenders's office and the
4 defendant in the case was a drug dealer.

5 And he was set upon by either two or
6 three, I forget, other drug dealers. He defended
7 himself with a handgun, shooting and perhaps
8 killing one or more of the other drug dealers.

9 My main area of testimony requested
10 by the public defender's office had to do with a
11 trained skill called weapon retention, which is
12 how police officers and others are taught to
13 retain or regain control of their firearms when
14 someone is trying to take those firearms away from
15 them.

16 The judge decided that he didn't
17 think that that was an appropriate area of
18 testimony for this case because the criminal
19 defendant had not himself been formally trained in
20 weapon retention. So, the Judge did not permit me
21 to testify. He didn't say I was not qualified.
22 He just said that was not an area that he thought
23 was relevant to that particular case.

24 The other case was in North Carolina
25 a few years back. It was a civil case in which I

1 was engaged by the attorney for a minister who
2 shot and killed his daughter's estranged husband
3 when the estranged husband was trying to break
4 into the house where the minister and his daughter
5 were. The Son [sic] was smashing in the front
6 porch windows with a bench or a table of some
7 sort. And the minister shot him several times.
8 There was a protective order against the son,
9 although, it's questionable that the son had
10 received notice of it, yet -- I say son, husband.

11 And the minister -- the minister was
12 found not guilty or no criminal charges were
13 brought against him. But this was a civil
14 wrongful death suit brought by the parents of the
15 deceased, estranged husband, concerning the death
16 of their son.

17 I said to the lawyer I was working
18 for, multiple times during the preparation of the
19 case, are you sure you don't want, are you sure
20 you don't need an expert report from me. And he
21 said to me, again, and again, no, no, here in
22 North Carolina, we don't need a written expert
23 report.

24 And when we got into court and the
25 lawyer wanted to put me on to testify, the

1 opposing lawyer, the Plaintiff's lawyer for the
2 estate of the deceased, said, well, Your Honor, I
3 have no report from Mr. Kapelsohn. And the judge
4 looked at the lawyer and said, you didn't give him
5 a report? And the lawyer said, well, judge as you
6 know, you're in North Carolina, we don't have to
7 provide written expert reports. And the judge
8 said, well, if he has not given an expert report
9 to the other side, I'm not going to allow him to
10 testify.

11 So again, it's not that the judge
12 decided, I believe, that I was not qualified on
13 the subjects, but, that he was not going to allow
14 me to testify in the absence of a written report.

15 Q. Thank you for those detailed answers.
16 In the last ten years, what percentage of your
17 income has been driven from your work as an expert
18 in litigation matters?

19 A. The majority of the income, I'm not
20 sure I can give you an exact number, but certainly
21 the majority of my income has come from working as
22 an expert or as a consultant in litigation.

23 Q. Are you, yourself currently involved
24 with any litigation matter involving the State of
25 New Jersey or any of its departments or employees

1 other than the matters that we're here for today?

2 A. I am working as an expert witness in
3 a case involving a shooting by a New Jersey state
4 trooper but I don't think I'm working for the
5 State of New Jersey. I think I'm working for
6 lawyers representing the trooper himself. I could
7 be wrong about that. But that's my recollection
8 of who hired me.

9 Q. What is the name of that -- what is
10 the name of that case?

11 A. I think it's called Gordon versus
12 Wetzel. W-E-T-Z-E-L.

13 Q. Is that a federal court matter or a
14 state court matter?

15 A. I -- I am not positive as I sit here,
16 but I believe it's a Section 1983 federal court
17 lawsuit.

18 Q. Are you -- other than that matter,
19 are you currently providing any consulting or
20 other expert services to the State of New Jersey
21 or any of its departments or employees?

22 A. I don't think so.

23 Q. And just so I'm -- I want to be a
24 little more specific to make sure that we're
25 clear. Are you -- are you involved currently with

1 any litigation matter involving a county
2 prosecutor's office of New Jersey including any of
3 that office's employees?

4 A. I don't think so. The reason I --
5 can I can explain why I answer that way?

6 Q. Sure.

7 A. I have, from time to time, worked as
8 a state's witness or prosecution witness in cases
9 in Atlantic County and Camden County and some
10 other counties. And also -- well, no these
11 wouldn't count. I worked in a case or two that
12 are civil cases against the City of Camden or its
13 officers.

14 Those are all cases that either I
15 know have settled or been determined in some way
16 or another dismissed, what have you, or I have not
17 heard about them in years. So, my belief is that
18 there are no currently pending cases that I'm
19 involved in that involve any New Jersey
20 prosecutors offices.

21 Q. Thank you. I'm going to turn back
22 now to your June 15th, which is marked as
23 Kapelsohn 1 Exhibit. Sitting here today, do you
24 stand by all the statements and conclusion you
25 rendered in that report?

1 A. I couldn't hear the end of what you
2 said. Can I confirm what?

3 Q. Do you confirm and stand by all of
4 the statements and conclusions that you rendered
5 in your June 15th report?

6 A. Yes.

7 Q. Is there anything else you would add
8 to this report that you would rely on in support
9 of the testimony you intend to render in this
10 litigation?

11 A. Well, you say that I would add to the
12 report? Yes. I would add my reply report and my
13 supplementary letter and the -- and the exhibits
14 to those. And in terms of whether there's
15 anything I would change in reading through all
16 three of these reports, I found, much to my
17 embarrassment, some typos and things, word missing
18 here or there. I think they're all
19 understandable, but they're not perfect in terms
20 of the typing, which is my typing.

21 Q. Sure. But other than the three
22 reports including any exhibits that were attached
23 that you just mentioned, is there anything
24 substantive that you would add that's not included
25 in those reports?

1 A. Well, I guess I would just add that,
2 to the extent it isn't abundantly clear from these
3 reports, all of those firearms on the New Jersey
4 statutory list of prohibited firearms that are
5 also intended to be used as models for things that
6 are substantially identical or whatever the
7 phrasing is, that are also prohibited, all of
8 those things are just combinations in one way or
9 another of the various features that I have
10 discussed. Magazines, detachable
11 magazines, pistol grips, flash suppressors,
12 folding or telescoping stocks, what have you. The
13 -- so I -- I give quite a few examples throughout
14 my reports, these three different reports, but
15 basically, all of those things on the list are --
16 they fall within the same discussion. They're all
17 just combinations of the same features as far as
18 I'm concerned.

19 Q. But as you indicate, you address
20 some, not all of those in your reports?

21 A. That's correct.

22 Q. Is there anything else substantive
23 that you would add to your reports?

24 A. Not that I can think of right now.

25 No.

1 Q. Do you have a Kapelsohn 1 in front of
2 you?

3 A. Is Kapelsohn 1 the June 15th report?

4 Q. Yes, it is.

5 A. Yes, I do.

6 Q. On page one of that report, you list
7 a number of different types of source material and
8 state that you, quote, have received -- or I'm
9 sorry had reviewed these materials. Are you
10 relying on each of these materials listed in
11 rendering one or more of your opinions in this
12 matter?

13 A. Yes, to one extent or another. Yes.

14 Q. Okay. Were any of these materials
15 given to you or referred to you by Plaintiff's
16 counsel?

17 A. Yes, the -- I said I've reviewed
18 materials you have provided. And it's written to
19 Attorney Schmutter. And it includes the
20 complaints in the two cases. And those things
21 were provided to me by Attorney Schmutter or his
22 office. And also, lists of firearms and firearms'
23 features prohibited by New Jersey law was provided
24 to me by his office, although I also accessed it
25 myself one or more times on the internet and

1 printed it out for myself.

2 Q. Anything else other than that?

3 A. I can't think of anything else. Oh,
4 I mean, he -- he provided me -- these are in -- in
5 other reports, like my reply report, he provided
6 me with all of the state's experts' reports, of
7 which I think there were nine if I remember
8 correctly. And then he provided me with Ashley, I
9 forget how to pronounce her last name, her report.
10 And also the Cramer reply report. Those things
11 were provided to me by Attorney Schmutter's
12 office.

13 Q. Did you, in any way, rely on Miss
14 Hlevinsky's report or Mr. Cramer's report in
15 offering any of these three reports that you gave
16 to Mr. Schmutter for this case?

17 A. No.

18 Q. You also state, on page 1 of your
19 June 15th report --

20 A. Excuse me, excuse me, I'm sorry.
21 Could I just hear that question again? I want to
22 make sure for you that I answer it correctly.

23 Q. You said you were given Miss
24 Hlevinsky's report. Did you rely on anything in
25 that report, in any way, in your -- any of the

1 three reports that you provided as an expert in
2 this matter?

3 A. The answer is no. And I'm not sure
4 whether or not I had her report at the time I
5 wrote my first report. I did have it at some time
6 subsequent to that.

7 Q. What about Mr. Cramer's report?

8 A. I didn't have that until just
9 recently. And I certainly didn't rely on it on
10 any of my three reports. I think I had written
11 all three of my reports before I had gotten his
12 report.

13 Q. You mentioned before that you
14 reviewed -- (inaudible) can you state which ones
15 you reviewed, specifically?

16 A. You were breaking up.

17 Q. You said before that you reviewed
18 certain New Jersey statutes. Can you identify
19 what statutes those were?

20 A. This would be the portions of the, I
21 think New Jersey calls it Assault Firearms Law,
22 that I thought were relevant to my subject areas.
23 And, in particular, as I said, the list of
24 prohibited firearms and the provisions that then
25 say that New Jersey also prohibits firearms that

1 are substantially identical, or whatever the
2 language is, to those firearms. And I -- I don't
3 -- without looking at the law, I can't cite the
4 statutory sections for you, but that's what I
5 looked at.

6 Q. In the course of preparing any of
7 your three reports in that matter, did you conduct
8 any tests or experiments?

9 A. No.

10 Q. Do you plan on conducting any tests
11 or experiments in the future course of this
12 matter?

13 A. Not unless asked to by counsel. Oh,
14 hold on one second, if you will. There was one
15 place in one of these reports where I -- I
16 commented that it was -- with regard to the expert
17 report of James -- forgive me if I'm
18 mispronouncing it, Yurgealitis or Yurgealitis. He
19 objected to the AR-15 rifle because he said the
20 bullet would pass through walls inside a
21 residence, apparently, and therefore be a danger
22 to others. And because of that, it was not a
23 suitable firearms for use of defense, self-defense
24 in the home.

25 And I made clear in my report that I

1 thought that many, many other projectiles,
2 including most all of the commonly used handgun
3 self-defense projectiles and 00 buckshot, which he
4 recommended, as one of the things he thought was
5 appropriate, I made clear in any report that those
6 things would, in my experience and previous
7 testing, would also pass through one or more walls
8 and endanger people in the next room or even two
9 rooms away.

10 And I said in my report that I could
11 easily demonstrate this by video to the court if
12 this went to trial and if this were an issue. And
13 so, to the extent I would need to make that video,
14 that would be one thing I want to do. And whether
15 I made it or not depends on whether counsel asks
16 me to make it.

17 Q. If I understand your testimony, you
18 had conducted in the past not necessarily for this
19 case, tests?

20 A. Yes, not for this case, but have done
21 in the past, multiple times. And I said in my
22 report, I've demonstrated it to classes of
23 instructors and others which I have.

24 Q. MR. VANNELLA: Counsel, for the
25 record, I would request any copies of any test,

1 reports, data, materials related to the tests that
2 Mr. Kapelsohn is referring to.

3 (Request.)

4 MR. SCHMUTTER: Could you please put
5 the request in writing and we'll look at it?

6 MR. VANNELLA: We'll follow up in
7 writing. I'm putting it on the record in this
8 deposition as a request.

9 BY MR. VANNELLA:

10 Q. For purposes of your June 15th
11 report, what subject areas are you holding
12 yourself out as an expert?

13 A. All of the subject areas encompassed
14 in this report. Do you want me to go through it
15 and make sure I don't miss any?

16 Q. I'll list what you indicate in your
17 report is your area of expertise. Firearms,
18 firearms safety, firearms training, ballistics,
19 shooting scene reconstruction, police training and
20 tactics, self-defense, use of force. Is there
21 anything -- is that all correct?

22 A. That's all correct. And then we get
23 down to some very specific things that are
24 discussed in my report, that are probably
25 encompassed by those more general categories.

1 For instance, the last subject we've
2 just discussed is penetration of walls of houses,
3 wallboard, sheetrock, by projectiles. So if -- if
4 we include that in either firearms or firearm
5 safety, that's included. I think those general
6 terms you had just given are good. I think, you
7 know, magazines, magazine capacity, semi-automatic
8 firearms, shotgun magazine capacity, pistol grips,
9 features of firearms.

10 If those things are included in the
11 general term of firearms, then, that's fine.
12 Folding or telescoping stocks, basically all of
13 the things that are included here, automatic
14 weapons, semi-automatic weapons, other mechanisms
15 of weapons such as pump-action shotguns and
16 revolvers and the other things discussed in here,
17 all included.

18 Q. Those are all firearms, correct?

19 A. Or features of firearms, yes. I just
20 want to make sure that we don't omit something
21 that I've given expert opinions about. I believe
22 I have expertise in all the areas that I've given
23 expert opinions about.

24 Q. Well, my question was for any subject
25 areas. So other than what I listed and what you

1 just added, are there any other subject areas that
2 you hold yourself out as an expert in these
3 matters?

4 A. You know, I've got the same problem I
5 had that caused me to give that last answer. When
6 you say firearms, that's a broad topic. This
7 whole subject, this whole lawsuit has to do with
8 firearms, you know, firearm safety, firearms use.

9 Q. What's the difficulty in the
10 question?

11 A. The difficulty is I don't want to say
12 yes, those are all the areas, and then have you,
13 at a later time, say, ha, ha, ha, he said he was
14 an expert in firearms, but he never said he was an
15 expert on pistol grips or telescoping stocks or
16 the rate of fire of automatic weapons or something
17 like that. You know, firearms is a broad topic.
18 If we accept it broadly, and all the other topics
19 you listed broadly, yes, I think that covers my
20 areas.

21 Q. Mr. Kapelsohn, my question is what do
22 you hold yourself out as an expert? Not what do I
23 say you're an expert or not an expert in. Could
24 you answer that question?

25 MR. SCHMUTTER: Objection. It

1 doesn't reflect the testimony of the record.

2 A. I think I did just answer that
3 question.

4 Q. Okay. Anything else you want to add
5 to that at this time?

6 A. No, sir.

7 Q. Do you recall testimony at trial with
8 regard to the subject area of firearms?

9 A. I missed the first --

10 Q. Any and all weapons, features,
11 anything else that would fall under your
12 definition of firearms?

13 A. I missed the first few words of your
14 question. It did not come across clearly. Could
15 you repeat it, please?

16 Q. Do you intend to offer testimony at
17 trial for each of the subject areas that you
18 confirmed from my -- that I listed and that you
19 added?

20 MR. SCHMUTTER: Objection. Doesn't
21 reflect the record.

22 A. And all of the subjects that are
23 covered by my three reports, so if we consider
24 history of firearms as one example, to be part of
25 the subject firearms, yes. And I would expect to

1 offer expert testimony, if asked, about any of the
2 subjects that other experts or other people
3 testified to at trial, or other things that are
4 asked of me by counsel.

5 Q. You mentioned history. Are you
6 saying you are an expert in history,
7 Mr. Kapelsohn?

8 A. I'm an expert with regard to some
9 aspects of the history of firearms. I've
10 commented on many aspects of that in these three
11 reports.

12 Q. What educational background do you
13 have in history of any kind?

14 MR. SCHMUTTER: Objection.
15 Ambiguous.

16 A. Well, I have a general education in
17 U.S. history from public school. I may have taken
18 one or more courses in history at Yale University.
19 But with regard to the history of firearms, it's
20 something I've studied pretty much all my life.
21 I'm now 71 years old. So I've studied that for
22 over 50 years, certainly. And the areas that I
23 commented on in my report, and provided expert
24 opinion on in my report, are areas that I -- I
25 believe at least I have expertise in, I have

1 specific knowledge in.

2 Q. Have you ever published any materials
3 on the history of firearms?

4 A. Not on that subject specifically, no.

5 Q. Have you ever been admitted as an
6 expert on subject matter on the history of
7 firearms?

8 A. That I couldn't tell you.

9 Q. Do you agree you're not an expert in
10 linguistics, Mr. Kapelsohn?

11 A. Well, I think I explain that in my --
12 in my response to what Dennis Baron said. And so
13 to an extent -- to the extent that I comment on
14 linguistics subjects, I believe I do have
15 expertise based on my knowledge of firearms and my
16 life-long study of them with regard to things like
17 whether a cartridge box is the same thing as a
18 magazine or not. Or whether a magazine is the
19 modern analog of a cartridge box. These are
20 issues raised by Dennis Baron. I certainly have
21 no degree in linguistics. I understand that
22 terminology and how it's used in the firearms
23 field.

24 Q. And have you ever been admitted as an
25 expert in any matter on linguistics?

1 A. Linguistics, I don't know. That is
2 kind of a broad question. I've testified in many
3 cases about the meaning of language and things
4 like owner's manuals and warnings for firearms.
5 So things having to do with language, whether we
6 call that linguistics or not, I don't know.

7 Q. Have you ever testified in any
8 matter on the meanings of words in the time of the
9 Colonial America?

10 (The court reporter asked for a
11 clarification.)

12 A. No. Excuse me one second. Colonial
13 America, he said. Proceed please. The reporter
14 had trouble hearing you.

15 Q. Have you ever testified as an expert
16 in meaning of words during the time of the
17 Reconstruction period of America?

18 A. No.

19 Q. Have you ever testified as an expert
20 on the meaning of words in any particular time
21 period in America?

22 A. Yes, as I've said to you, the meaning
23 of words and things like firearms owner's manuals,
24 instructions, warnings, product literature, yes.

25 Q. Did any of those -- were these

1 warnings, labels, printed at any time before the
2 20th Century?

3 A. Probably not.

4 Q. Do you agree you're not an expert on
5 statistics or data analysis?

6 A. That's correct.

7 Q. Do you agree you're not an expert on
8 mass casualty events?

9 A. Oh, I don't know about that.

10 MR. SCHMUTTER: Objection.

11 Objection. Ambiguous. Undefined.

12 Q. When you say you don't know about
13 that, what do you mean?

14 A. I have studied and taught things like
15 active shooter events and procedures for some
16 years now. I've attended numerous courses and
17 classes on the subject. I'm certified to teach
18 that subject and attending another course on that
19 subject within the next few weeks. I'm teaching
20 on that subject in, I think, September, to a
21 professional group in Allentown. So, I don't
22 agree that I have no expertise with regard to mass
23 casualty events if we include in that things like
24 active shooter events.

25 Q. Do you have any expertise in the

1 social political effect of a mass casualty event?

2 MR. SCHMUTTER: Objection. No

3 foundation. Undefined.

4 A. I don't understand your question.

5 Q. When you say you are an expert in
6 mass shooting, exactly, you're talking about how
7 it occurs, what happens during the events and who
8 is involved in the event, things like that,
9 correct?

10 MR. SCHMUTTER: Objection.

11 Mischaracterizes the record.

12 A. Among other things. And other
13 things, as well.

14 Q. What are those other things?

15 A. What to do to prevent those events.
16 What to do to respond to those events. Tactics
17 that are used by law enforcement and others in
18 responding to those events. The history of such
19 events. The details of such events.

20 Q. What do you mean when you say history
21 of such events?

22 MR. SCHMUTTER: I'm sorry, I didn't
23 hear the question. Can you repeat it? I
24 apologize.

25 Q. What do you mean when you say the

1 history of such events?

2 A. A number of the courses I've attended
3 and some of the courses that I've taught, have
4 included example after example after example of
5 such events. How they were conducted, the tactics
6 that were used, the firearms that were used, the
7 demographics of the shooters, the number of
8 deaths, the number of casualties, how the deaths
9 and casualties were or could have been moderated
10 or reduced, things of that sort. So the history
11 in the sense of the history of active shooter
12 events at least during the last hundred years or
13 so.

14 Q. You're not a medical doctor, correct?

15 A. That's correct.

16 Q. And you're not a physician of any
17 kind. Is that correct?

18 A. That's correct.

19 Q. We agree you're not an expert on
20 forensic sciences?

21 A. Well, I think it depends on what you
22 mean by forensic sciences. I certainly do things
23 like shooting scene reconstruction. And many
24 people would consider that a forensic science,
25 determination of trajectories of bullets, who was

1 standing where, how the wounds through someone's
2 body had to be created by someone standing in a
3 certain position at a certain elevation, et
4 cetera, the ballistics of the firearms involved.
5 Many people would consider those things forensic
6 sciences.

7 Q. So you testified, I believe, that you
8 trained both law enforcement officers, as well as
9 private individuals. I'll call them private
10 civilians. Is that correct?

11 A. Yes.

12 Q. Are there differences in how you
13 train law enforcement officers and how you train
14 private civilians?

15 A. In some respects, yes. In other
16 respects, no.

17 Q. Is it fair to say law enforcement
18 officers who go to police academies and receive
19 training there receive much more extensive
20 training than private civilians that enroll in
21 firearms instruction programs or self-defense
22 programs?

23 A. As a general statement, I couldn't
24 agree with that. Because it's true in some
25 instances and some instances not. In some

1 instances, private individuals receive very
2 advanced training that goes far beyond what most
3 police officers receive at the police academy. So
4 it depends on the details.

5 Q. Well, what are those areas where
6 private civilians receive more training than
7 police officers?

8 A. There are private classes and private
9 training academies where individuals, if you will,
10 civilians, receive far more advanced and detailed
11 training than police do in most police academies.

12 In fact, some of those training
13 academies are ones I've worked at and sometimes
14 they're attended by police or by police
15 instructors or by Navy SEALs or by SWAT team
16 members or others because the training given there
17 is more advanced than what the officers have
18 received in their own departments or their own
19 police academies. So it depends on -- you're
20 asking a question that, in its generality is not
21 -- is not correct. I can't answer that
22 affirmatively.

23 Q. I didn't ask -- that question was not
24 a generality. I asked what specific areas do
25 private civilians receive more training than law

1 enforcement?

2 A. Firearms techniques, firearms skills,
3 tactical skills, those are some of those areas.

4 Q. Private civilians receive more
5 training in those areas than police officers?

6 A. In some training schools and
7 academies, yes. In others, not. It depends on
8 what -- you're talking about a world of training
9 possibilities. We're talking about police
10 academies all over the United States. We're
11 talking about instructor schools run by states, by
12 federal agencies, by state training commissions
13 and by private organizations. And we're talking
14 about private training schools run all over the
15 country and elsewhere around the world. And by
16 dozens and dozens, maybe hundreds, of private
17 professional instructors.

18 So there's no way to give one answer
19 that is accurate across the board.

20 Q. You testified as an expert before on
21 police tactics, correct?

22 A. Yes.

23 Q. And you've testified in prior matters
24 on use of force by police officers, correct?

25 A. Yes, many times.

1 Q. And you, yourself are a law
2 enforcement officer if you include your positions
3 with the sheriff's departments that you mentioned,
4 correct?

5 A. I do, and I am.

6 Q. Now, law enforcement is tasked with
7 pursuing and apprehending and neutralizing
8 criminal targets. Is that fair to say?

9 A. Yes.

10 Q. Private individuals, private
11 civilians are generally not encouraged to pursue
12 suspects and arrests of a suspect. Is that fair
13 to say?

14 A. Generally, that's correct.

15 Q. Is it correct private civilians
16 generally are instructed to undertake the bare
17 minimum action necessary to protect themselves or
18 someone else from eminent harm?

19 A. I wouldn't agree with that statement.
20 It's not a good statement in my opinion.

21 Q. Are there times when private
22 civilians should take more than what is necessary
23 to protect themselves?

24 A. Now you just changed the question.
25 Your first question was the bear minimum. And

1 there are federal courts that have said, with
2 regard to police, that that is an impossible
3 standard to apply and an unreasonable standard.
4 And the same goes towards civilians. I can
5 explain that if you wish. If you keep changing
6 the question, I'll have to keep changing my
7 answer.

8 Q. I would rather you just answer my
9 questions, Mr. Kapelsohn.

10 A. That's what I'm doing.

11 Q. You would agree that in self-defense
12 situations, law enforcement officers and private
13 civilians do not necessarily share the same
14 objectives?

15 A. Correct.

16 Q. In your positions as deputy sheriff,
17 or you know what I mean, in the two sheriffs
18 departments that you worked at, did you ever
19 arrest an individual in that capacity?

20 A. Yes.

21 Q. In any of those instances where you
22 arrested an individual, did you ever do so at gun
23 point?

24 A. Yes.

25 Q. How many situations involving

1 barricaded gunmen did you deal with in those
2 positions?

3 A. One stands out in my mind right now.
4 But there -- there have been more than one. But
5 one I can remember in great distinct detail.

6 Q. In those -- in your position in
7 either of the sheriff departments did you ever use
8 the AR-15 rifle?

9 A. Yes, both departments.

10 Q. And did you carry that rifle with you
11 during your normal course of duties?

12 A. Yes.

13 Q. And you said both departments you did
14 that?

15 A. Correct.

16 Q. How many times did you discharge the
17 AR-15 rifle you carried with you?

18 A. Do you mean in training? Do you mean
19 at human beings? What do you mean?

20 Q. At human beings, not in training, in
21 the real-world situation?

22 A. Well, all the times I've used it on
23 duty have been real-world situations. If I've
24 arrested someone at gun point, that a real-world
25 situation. But if your question is how many times

1 have I fired at people, the answer is none.

2 Q. On page 7 and 8 of your June 15th
3 report, you generally describe your experience and
4 ownership of certain weapons. Is that accurate?

5 A. Yes.

6 Q. Have you ever shot any one of those
7 firearms at someone else?

8 A. At a person? No.

9 Q. Page 7 of this report you state you
10 have also written over 30 published articles of
11 firearms. Is that correct?

12 A. Page what?

13 Q. Page 7.

14 A. No, it doesn't say that. It says
15 I've written over 30 publish articles about
16 handguns, handgun ammunition and handgun
17 technique. And then it goes on to give more
18 articles about shotguns, et cetera. So, no it
19 doesn't say 30 articles about firearms.

20 Q. How many you have written about
21 firearms?

22 A. Oh, about 130, more or less.

23 Q. Have any of those articles been peer
24 reviewed?

25 A. I don't think so. Most of the

1 firearms journals are not peer reviewed.

2 Q. Have you written any published
3 articles on magazines?

4 A. Just on magazines? No. But
5 articles, that among other things, discuss
6 magazines, many.

7 Q. Were any of those articles that
8 discussed magazines peer reviewed?

9 A. Well, I'm not sure what you mean by
10 peer reviewed. For instance, all the articles
11 published in the Firearms Instructor, which is the
12 publication of the International Association Of
13 Law Enforcement Firearms Instructors, are approved
14 by its editorial board who are all peers. They
15 are all leading firearms instructors. But if you
16 mean peer reviewed in the academic sense of a
17 academic journal, no.

18 Q. At the bottom of page 7, last
19 paragraph. You use several acronyms. I want to
20 go over what each one stands for. The first one
21 is ASLET. What is that an acronym of?

22 A. Give me just a second, if you would.
23 Maybe it will save you time, all of
24 those acronyms are explained in detail on page 2
25 of my report.

1 Q. I think that is fine. Thank you for
2 pointing that out.

3 Q. You mention on page 7, I believe,
4 that you had been a presenter at ASLETIA. That's
5 one acronym. IALEFI, a second acronym and ILEETA,
6 panels. Is that correct?

7 A. I say conferences.

8 Q. Conferences, is that correct?

9 A. I've also been a presenter on some of
10 their panels but I say conferences here. Yes,
11 that's correct.

12 Q. Are there any other panels or
13 conferences that you have served?

14 A. Oh, yes, quite a good number.

15 Q. Did any of those other expert panels
16 or conversations concern assault firearms, assault
17 weapons or magazines?

18 MR. SCHMUTTER: Objection. No
19 foundation. Ambiguous.

20 A. Again, if we're -- we're always
21 assuming that you're using those terms the way New
22 Jersey uses them, yes, some of those other
23 conferences do. Or did.

24 Q. *(read this) If that is the
25 foundational objection, I've already stated on the

1 record that is what I mean when I say assault
2 weapons. I understand that plaintiffs object to
3 that term and the way New Jersey defines it, but
4 for purposes of this deposition I think we all
5 understand that that is what is meant.

6 MR. SCHMUTTER: I disagree. I don't
7 think you ever defined assault weapon. You said
8 assault firearm. When you say assault firearm,
9 you mean New Jersey definition. I don't think at
10 any time you defined what you mean by the term
11 assault weapon.

12 MR. VANNELLA: I believe I said
13 assault weapon, what it is defined as. But for
14 the record, when I say assault weapon it's what
15 Plaintiffs are challenging. They're challenging,
16 specifically New Jersey's law that defines assault
17 firearms, which -- let me ask you this
18 Mr. Kapelsohn. Do you -- if I say the word
19 assault weapons, do you understand that to mean
20 assault firearms? Or do you see any difference in
21 the terminology?

22 MR. SCHMUTTER: Objection. Lack of
23 foundation. Are you asking for the purposes of
24 the definition for the deposition or generally?
25 Because --

1 BY MR. VANNELLA:

2 Q. When I say -- when I use the term
3 assault weapons, Mr. Kapelsohn, what is your
4 understanding of what I mean?

5 A. I'm hoping that you mean what New
6 Jersey has in its assault firearms law, which is
7 the enumerated list of firearms and firearms
8 with -- semi-automatic firearms with detachable
9 magazines of over ten rounds that have any of
10 those other features and other firearms that
11 Are -- I think it says substantially identical.
12 It may say substantially similar to those
13 firearms. I'm thinking you're meaning New
14 Jersey's meaning of those things rather than mine,
15 for instance, or anybody else's.

16 MR. VANNELLA: Thank you. That is
17 what I mean. And any reference I have made or
18 will make in this deposition in my questions to
19 assault firearms and assault weapons, either of
20 those terms, that's what I mean.

21 A. Okay.

22 Q. So to get back to my question. I'll
23 repeat it because it was a while back. You
24 mentioned other expert panels and conferences that
25 you served on other than the ones you refer to,

1 specifically at the bottom of page 7 of your
2 report.

3 Did any of those other panels or
4 conferences concern assault firearms?

5 A. I think so, but I would have to
6 really tax my memory and look back. But I think
7 so. I've taught a number of times, for instance,
8 at the North Carolina Justice Academy. I think
9 some of those programs may have involved what New
10 Jersey calls assault firearms. I've taught for
11 the Arizona law enforcement officers -- I don't
12 know, training conference or whatever, that may
13 also -- that -- those are some examples.

14 Q. And same question, but did any of
15 those panels or conferences concern magazines?

16 A. I think they concern magazines.
17 Because if I'm teaching about pistol and
18 transition from revolvers to pistols, it involves
19 magazines. You know, if they involve
20 semi-automatic rifles, it involves magazines. So
21 it's a very broad question. But I guess my answer
22 would be, yes, of course.

23 Q. I'll turn now to page 17 of your June
24 15th report.

25 A. Yes, sir.

1 Q. So, you list the -- you list five
2 statutory features under New Jersey law of rifles
3 that are classified as assault weapons, correct?

4 A. Yes.

5 Q. Is it also correct that you, while
6 you discuss the first four features in your
7 report, you don't discuss the fifth feature, which
8 is a grenade launcher.

9 A. Give me just a moment. I thought it
10 might be in here some place but I don't see it.
11 It may be correct that I don't comment on the
12 grenade launcher feature.

13 Q. Is it your view that private
14 civilians should be permitted to possess and use
15 grenade launchers?

16 A. No, I think I've given the opinion,
17 although I can't find it in here, it may have been
18 in Miller versus Becerra, that grenade launchers
19 and grenades are considered destructive devices
20 and have been largely prohibited from civilian
21 ownership in this country since 1934. And that
22 it's basically a, pretty much, a nonissue.

23 Q. I want to go back to page 10 of your
24 report.

25 A. Yes, sir.

1 Q. And on page 10 of this report you
2 state that semi-automatic rifles, shotguns and
3 handguns were all developed before 1900, correct?

4 A. Yes.

5 Q. When you use the word semi-automatic,
6 what do you mean by that?

7 A. Semi-automatic means a firearm that,
8 upon the pulling of the trigger, fires -- well, I
9 have to explained here. I can read the paragraph
10 unless you want me to do it from memory. Which
11 would you prefer? It's here on page 10. It's
12 this whole paragraph immediately preceding the
13 sentence that you pointed me to.

14 Q. Well, why don't you just read from
15 the report what you want to say in response to
16 that.

17 A. All right. It says, on page 10, a
18 semi-automatic firearm uses the power of the
19 firing cartridge, typically either through
20 diverting some of the pressurized gas from the
21 cartridges's burning propellant powder, or through
22 the rearward recoil produced when the projectile
23 moves forward out of the cartridge case to operate
24 the gun's mechanism, extracting and ejecting the
25 fire cartridge case and bringing a fresh cartridge

1 into position for firing.

2 In a semi-automatic firearm, the
3 trigger must be pulled separately for each shot. A
4 semi-automatic firearm differs from a manually
5 operated repeating firearm, such as a bolt-action,
6 lever-action or pump-action firearm, in which the
7 user manually operates the mechanism to bring a
8 fresh cartridge into position for firing.

9 The semi-automatic also differs from
10 a fully automatic, parenthesis, automatic, closed
11 parenthesis, firearm, such as a machine gun, in
12 which holding the trigger depressed will result in
13 a continuous, rapid series of shots until the
14 trigger is released or the ammunition supply is
15 exhausted.

16 Q. Thank you.

17 A. You're welcome.

18 Q. Now, which specific semi-automatic
19 rifles were developed before 1900?

20 A. Oh, I would have to go back and look.
21 But I believe John Browning, among others, had --
22 had one or more. I would need to go back and look
23 to check the exact dates of certain ones. But
24 pistols, rifles and shotguns, I believe, that were
25 semi-automatic, were all developed before 1900.

1 Q. Well, my question was just about
2 rifles. So you mentioned John Browning. You're
3 talking about semi-automatic rifles.

4 A. He was one. But there were other --
5 other investors of semi-automatic firearms. There
6 were European semi-automatic pistols. I think
7 Bergmann-Bayard and some others, perhaps. Again,
8 as to the exact year, I would need to go back to
9 make sure I was not misspeaking about just which
10 models existed before 1900 as opposed to 1902 or
11 1903 or what have you.

12 Q. And just for the clarity, you say
13 that, specifically, semi-automatic shotguns also
14 were developed prior to 1900?

15 A. I believe that's correct, yes.

16 Q. Do you know the first year in which
17 any semi-automatic rifles were first sold to
18 private civilians?

19 A. Can't tell you that from memory, no.

20 Q. What about semi-automatic shotguns?

21 A. I can't tell you that from memory,
22 no.

23 Q. What about semi-automatic pistols,
24 you said?

25 A. Before 1900. But I can't tell you

1 the exact year that they were offered for sale.

2 Q. And when you say they were available
3 for sale prior to 1900, which specific
4 semi-automatic pistols are you referring to?

5 A. I think I already said I need to go
6 back and check to make sure I was not misspeaking
7 about a given model.

8 Q. But who was the manufacturer of those
9 pistols?

10 A. I would need to go back and look to
11 be sure.

12 Q. So you -- the answer is you don't
13 know?

14 A. No. The answer is, I would need to
15 go back and look to be sure. I don't recall as I
16 sit her today with enough specificity to answer
17 under oath, is very different from I don't know.

18 Q. Then say I don't recall, please.

19 A. I've given my answer.

20 Q. In your report on page 10, you also
21 state that semi-automatic rifles, shotguns and
22 handguns were a common use in the early 1900s. I
23 omitted some text in the middle, but is that a
24 fair statement from page 10 of your report?

25 A. It is, yes.

1 Q. What is your definition of, quote,
2 common use, end quote, as it pertains to private
3 civilians in the United States?

4 MR. SCHMUTTER: Objection to the
5 extent it calls for a legal conclusion or a legal
6 opinion.

7 BY MR. VANNELLA:

8 Q. Is it your opinion as an expert that
9 semi-automatic rifles, shotguns and handguns were
10 in common use in the early 1900s?

11 A. Yes.

12 Q. So when you give that opinion, what
13 do you mean when you say common use?

14 A. Well, it's not a legal opinion in
15 terms of the legal meaning of common and for
16 purposes of this case. It means widespread, or
17 not just one or two examples. I mean, our 1911
18 semi-automatic pistol was issued to an entire
19 army. We fought World War I with it in 1917
20 through '19. That's early part of the early
21 1900s. And I would say that's common use.
22 Millions of them were made and issued. That's one
23 example of common use. I'm not saying common has
24 to mean millions. But that's one example.

25 Q. So are you saying that that one

1 example shows that they were in common use by
2 private civilians?

3 A. They were in common use by private
4 civilians? No, that example shows they were in
5 common use. And the sentence in my report,
6 doesn't say by private civilians. It says, in
7 common use. So I gave you an example of a pistol
8 that was in common use in terms of millions of
9 copies of it.

10 Q. So you're not offering an opinion
11 that semi-automatic rifles were in common use by
12 private civilians in the United States in the
13 early 1900s, correct?

14 A. I believe they were in common use.
15 Yes, by private civilians.

16 Q. Private civilians who were soldiers
17 at war?

18 A. That's what you've said. That's not
19 what I said.

20 Q. No, that's not -- I never said
21 anything about war. You did, Mr. Kapelsohn. I
22 said private --

23 A. You just asked me a question where
24 you said, who were soldiers at war? That was your
25 question.

1 Q. I'll ask the question again.

2 What evidence are you relying on that
3 semi-automatic rifles were in common use by
4 private civilians in the early 1900s?

5 A. I would need to go back and give you
6 specific examples as evidence. I didn't come here
7 with evidence.

8 Q. Do you have any evidence, sitting
9 here today, to support -- is it your opinion --
10 strike that.

11 Is it your opinion that
12 semi-automatic shotguns were in common use by
13 private civilians in the United States in the
14 early 1900s.

15 A. Yes.

16 Q. What evidence are you relying on in
17 support of that?

18 A. My general knowledge of this field.
19 But if you want specifics, I didn't come here with
20 evidence. I came her with my reports.

21 Q. Is it your opinion that
22 semi-automatic handguns were in common use by
23 private civilians in the United States in the
24 early 1900s?

25 A. Yes.

1 Q. Do you have any specific evidence
2 that you're relying on in support of that opinion?

3 A. I didn't come with evidence.

4 Q. In your report on page 11, you state
5 that the NSSF estimated -- strike that. I'll
6 follow up -- I'll restart.

7 On page 11 of your report, you state
8 that the National Shooting Sports Foundation,
9 quote, estimated about five years ago that there
10 were at that time between five and ten million
11 AR-15 rifles in civilian hands in the United
12 States. Did I read that correctly?

13 A. Yes.

14 Q. Now, when you cite that, what
15 specific source are you referring to?

16 A. I didn't refer to a specific source,
17 but I have read it in a specific source.

18 Q. Was this a study, an article, what
19 was this?

20 A. Some kind of NSSF published material.

21 Q. Do you know what survey methods, if
22 any, the NSSF used?

23 A. I know that the NSSF has members that
24 are all of the major and most of the minor
25 firearms manufactures in the United States. And

1 that they, among other things, get information
2 from those manufactures and from the BATF or
3 BATFE.

4 MR. VANNELLA: Counsel, on the record
5 I would request a copy of this source or exactly
6 whatever it is that Mr. Kapelsohn is relying on.

7 MR. SCHMUTTER: Put your request in
8 writing and we'll have a look at at it.

9 (Request.)

10 BY MR. VANNELLA:

11 Q. Sir, do you know sitting here, when
12 the NSSF states there were between five and ten
13 million AR rifles in civilian hands in the United
14 States five years ago, do you know whether that is
15 referring to any and all moderate sporting rifles
16 or only AR-15s, specifically?

17 A. I believe it referred to AR-15s.

18 Q. Do you know that -- when this study
19 refers to the number of rifles that were in
20 civilian hands, whether that includes the number
21 of rifles that are in possession of law
22 enforcement agencies?

23 A. I believe not, but I'm not positive.

24 Q. Do you know if it includes the number
25 of firearms that are in possession of private

1 security agencies?

2 A. I would expect it does.

3 Q. Do you know if that includes the
4 number of AR-15s that are in possession of firearm
5 retailers?

6 A. I would expect it does. But I don't
7 know for sure.

8 Q. Do you know if it would include the
9 number of AR-15s in the possession of people who
10 are prohibited by law from owning firearms?

11 A. I don't know.

12 Q. Now, I already mentioned the term
13 modern sporting rifles. And you use that term on
14 page 11, as well. I should ask, what is a modern
15 sporting rifle?

16 A. It's a term that has come to be used
17 for an AR-15.

18 Q. And only AR-15s?

19 A. Some people may apply it to other
20 semi-automatic box magazine fed .223 or AR-15 or
21 AK-47 type rifles. In other words, there's not a
22 -- I think one definition that all people follow.

23 Q. So if you were to include, in the
24 term moderate sporting rifles, what other people
25 besides yourself may use that term for, could that

1 include rifles that are fully automatic as opposed
2 to just semi-automatic?

3 A. No.

4 Q. Using, again, that broadened term as
5 you described it, are all modern sporting rifles
6 centerfire or can they come in other forms such as
7 rimfire?

8 A. Well, there are AR-15s that are made
9 for rim fire cartridges. I have heard the term
10 modern sporting rifle only applied to center fire
11 rifles. But, again, there's no -- there's no
12 governing body that tells people they can or can't
13 use a term to apply to something else. I've heard
14 it applied to center fire semi-automatic rifles,
15 not to rimfire rifles. But some people may use
16 more broadly than I do.

17 Q. Again, using that broader definition,
18 are all modern sporting rifles capable of
19 receiving a detachable ammunition feeding device
20 like a magazine?

21 A. By whose definition?

22 Q. By the definition that we've been
23 using for these questions.

24 A. Well, I've said in these questions --

25 MR. SCHMUTTER: Objection.

1 Mischaracterizes the record.

2 A. I've said repeatedly in my answers,
3 that different people and different sources may
4 use the term differently and there is no one
5 standardized required usage that I'm aware of.

6 As I am aware of it, it is tip -- the
7 term modern sporting rifle is typically applied to
8 AR-15s, AK-47s. In other words, detachable box
9 magazine semi-automatic rifles.

10 Others may use it to mean such rifles
11 that don't have detachable magazines or are rim
12 fires instead of center fires or what. But I've
13 typically heard the term, and I use the term here,
14 meaning detachable box magazine, center fire,
15 semi-automatic rifles.

16 Q. Let me ask you this, as you would
17 understand the term modern sporting rifle, as you
18 would use it, what are the required elements or
19 features of the rifle that would make it a modern
20 sporting rifle?

21 A. Semi-automatic action, detachable box
22 magazine, centerfire cartridge, of -- of type such
23 as the AR-15, AK-47 or similar.

24 Q. Under your definition of modern
25 sporting rifles as you understand the term, are

1 AR-10 style rifles modern sporting rifles?

2 A. If they are semi-automatic, yes.

3 They could be.

4 Q. And again, under the term as you
5 understand it, are AK-74 style rifles modern
6 sporting rifles?

7 A. If semi-automatic, they could be.

8 Q. Do you know when the term modern
9 sporting rifle was coined?

10 A. I first heard it within the last, oh,
11 five, six, seven years. Maybe a little less than
12 that. I didn't hear it before that.

13 Q. Do you know who first coined that
14 term?

15 A. No.

16 Q. Do you remember when you first saw
17 the term used?

18 A. No.

19 Q. Still on page 11 of this report you
20 state the following: In recent years, popularity
21 in sales of the AR-15 have increased greatly and
22 it has now become one of the most popular rifles
23 and widely used rifles in the country. Is that
24 correct?

25 A. Yes.

1 Q. And when you say that statement, is
2 it for the same reasons that -- strike that.

3 Like what is your basis for that
4 statement?

5 A. My knowledge of the firearms field,
6 the fact that I teach and work all over the
7 country, that I go into gun stores all over the
8 country, that I deal with manufacturers of
9 firearms all over the country, and sometimes
10 outside the country, that I go to shooting ranges
11 and competitions and classes and courses all over
12 the country and see the kinds of firearms that are
13 in widespread use. Plus my knowledge of firearms
14 data from people like the BATF.

15 MR. VANNELLA: Counsel, we would
16 request any data or other evidence that
17 Mr. Kapelsohn is relying on in support of this
18 particular statement.

19 MR. SCHMUTTER: As always, put it in
20 writing, and we'll look into it.

21 (Request.)

22 BY MR. VANNELLA:

23 Q. Still on page 11 of your report. You
24 write that current estimates of AR-15s and AK type
25 semi-automatic firearms, quote, in civilian hands

1 in the United States are in the range of 25
2 million or more, end quote.

3 What is the source of that estimate?

4 A. I've seen that number in various
5 written documents. I can't point to one source.
6 I could probably point to several sources.

7 MR. VANNELLA: Counsel, we would
8 request any data or other evidence that
9 Mr. Kapelsohn relied on for that statement, as
10 well.

11 MR. SCHMUTTER: Please put it in
12 writing. Thank you.

13 (Request.)

14 BY MR. VANNELLA:

15 Q. Still on page 11. You state, quote,
16 the AK became one of the most widely used rifles
17 in the world, with semi-automatic versions being
18 sold in the United States and other countries for
19 civilian use, end quote. What is the basis for
20 that statement?

21 A. Well, going back many decades in my
22 career in the firearms industry, as far back as
23 25, 35 years ago, there were, at that time,
24 estimated to be 50 million AK-47s produced in the
25 world.

1 It was used as the military rifle by
2 numerous countries around the world. Since that
3 time, many more have been produced, including in
4 semi-automatic form. They've been made in this
5 country and other countries and imported into this
6 country.

7 So, I feel I'm on very solid ground
8 by saying it's one of the most widely used rifles
9 in the world. And in saying that semi-automatic
10 versions are sold in the United States and other
11 countries for civilian use, these are things I
12 know from my work in the firearms field.

13 Q. But you're relying on specific
14 evidence and data that you state that you have
15 seen that at various times. Is that correct?

16 A. Well, some of it is relying on
17 written data that I've seen for decades. Some of
18 it is relying on books about the AK-47. Some of
19 it is relying on walking into gun stores and
20 seeing walls and displays full of AK-47s for sale.

21 When I say AK-67s, I mean the
22 semi-automatic civilian, if you will, version of
23 it. I've probably walked into three gun stores
24 and seen those within the last two weeks, as just
25 an example. So it's based both on written things

1 and on my knowledge and on my work in the field.

2 MR. VANNELLA: Counsel, same request
3 for any and all data or other evidence
4 Mr. Kapelsohn is relying on for that statement.

5 MR. SCHMUTTER: Please put it in
6 writing, and we'll have a look.

7 (Request.)

8 BY MR. VANNELLA:

9 Q. I want to turn now to page 25 of your
10 June 15th report. Let me know when you're there.

11 A. I'm there.

12 Q. Halfway down next to number two, you
13 state the following, quote, the AR-15, AK-type,
14 and similar semi-automatic rifles are owned and
15 used by millions of law-abiding Americans for
16 lawful purposes, including self-protection,
17 recreational shooting, hunting and pest control,
18 end quote. Is that correct?

19 A. Yes.

20 Q. What is your basis for saying that?

21 A. My knowledge and my work in this
22 field.

23 Q. You were asked some questions about
24 your basis for knowing approximately how many
25 AR-15 or rifles and/or other rifles are owned by

1 Americans. How do you know how many or how do you
2 know how AR-15, AK-type or similar semi-automatic
3 rifles are used by Americans?

4 A. By seeing them used, by talking to
5 people who use them, by reading articles about
6 their use, by reading books about their use, by
7 things on the internet showing people hunting with
8 one kind of firearm or another or target shooting
9 with one kind or another, by my own participation
10 in firearms competitions and training courses,
11 training programs, things of that sort, by -- you
12 know, as widely as I can say it, by my work in
13 this field. This is what I do for a living.

14 Q. So you indicated that you have spoken
15 with people, which people have you spoken?

16 A. Come now, really? Do we want me to
17 start to come up with a list of everyone I know
18 who owns an AR-15 or AK-47 and has used it for
19 target shooting or hunting or pest control or
20 self-defense? Is that what you're asking me for?

21 Q. Mr. Kapelsohn, you're here as a
22 proposed expert. And you're repeatedly saying
23 that you're basing your opinions, in part, on
24 speaking with people. All I'm asking you is which
25 people you have spoken with?

1 A. People in my circle of friends and
2 acquaintances, people in the firearms instructors
3 organizations and law enforcement training
4 organizations I'm connected with, people at gun
5 shops, people at shooting ranges, people who hunt
6 with guns.

7 MR. VANNELLA: I will request a list
8 of any specific individuals and their addresses
9 that Kapelsohn is specifically relying on for this
10 report in support of this particular statement.

11 MR. SCHMUTTER: Please put it in
12 writing and we'll have a look at it.

13 (Request.)

14 MR. VANNELLA: We also request --
15 well, strike that.

16 BY MR. VANNELLA:

17 Q. Am I correct that your reports don't
18 document how many millions or how many -- number
19 at all of how many law-abiding Americans have
20 actually used AK-15, AK-type or similar
21 semi-automatic rifles for self-protection?

22 A. I could not understand the first few
23 words of your question, they were broken up.

24 Q. Can you point to where in your report
25 you document, specifically how many millions of

1 law-abiding Americans have actually used AR-15,
2 AK-type or similar semi-automatic rifles for
3 self-protection?

4 MR. SCHMUTTER: Objection.
5 Ambiguous.

6 A. It doesn't.

7 MR. VANNELLA: How is that ambiguous?

8 MR. SCHMUTTER: You don't define what
9 you mean by used for self-defense or
10 self-protection.

11 BY MR. VANNELLA:

12 Q. Mr. Kapelsohn, when I use the word
13 self-defense, what do you understand that word to
14 mean?

15 A. That word, I understand. It's use
16 that I have a problem with understanding. Do you
17 mean keep it for self-protection or do they have
18 to have fired it at someone, for instance?

19 Q. All right. When I say
20 self-protection, I mean, specifically unless I say
21 otherwise, either fire or aim at a person in a
22 specific instance.

23 A. That I don't know. But I don't
24 consider that to be a good way to define using a
25 gun for self-protection, that we have to go around

1 pointing it at someone or firing it at someone.
2 People keep guns in their homes and their
3 businesses for self-protection. And most of those
4 guns are never fired at a criminal or an attacker.
5 But they're still used for the purpose of
6 self-protection. And that's how I meant it when I
7 said it in my report several times.

8 Q. Has any person, that you're aware of,
9 ever been injured by an attacker where there was
10 no intent?

11 MR. SCHMUTTER: Objection. No
12 foundation. Ambiguous. Incomprehensible.

13 BY MR. VANNELLA:

14 Q. Would you agree that a gun has no
15 actual use when it comes to self-protection unless
16 it's actually used in response to someone who is a
17 threat?

18 MR. SCHMUTTER: Objection.
19 Undefined. Ambiguous

20 A. I would not agree.

21 Q. You would not? So, just purchasing a
22 gun makes someone more protected even if they
23 never actually fired it?

24 A. It may. And certainly carrying a gun
25 may make someone better protected even if they

1 never point it at someone or fire it. There's
2 often a deterrent effect. But it's a very complex
3 subject. You've asked one question. And, I
4 guess, I would not --

5 Q. Fair enough.

6 A. -- I wouldn't agree with your
7 question.

8 Q. Fair enough. What if someone
9 purchased a gun and the only time they ever held
10 it in their hands was when they brought it to
11 their home and have not touched it since, does
12 that do anything to protect them more than a
13 person who never had a gun in the first place?

14 A. That may. It depends on the
15 circumstances.

16 Q. It may? Under what circumstances
17 would that person be protected more than someone
18 who never purchased a gun?

19 A. All right. Well let's --

20 MR. SCHMUTTER: Objection.
21 Ambiguous.

22 A. We can give probably thousands of
23 examples. But let me give you just one or two
24 then. Let's say we have a woman who is being
25 threatened by her ex-spouse or ex-boyfriend, and

1 she gets a gun. She gets a permit for a gun. Or
2 buys a gun without a permit, if it's legal to do
3 that where she is, and brings it home and let's it
4 be known -- and the word gets around that she now
5 has a gun. That may keep that person from trying
6 to break into her home and harm her. That's one
7 example.

8 Q. But going with that example, that gun
9 could very well be a handgun or a gun other than
10 the particular firearms that are being challenged
11 in this lawsuit, correct?

12 A. It could be. Or it could be one of
13 the guns that is being challenged in this lawsuit.

14 Q. To return to my original question
15 which I'll modify. Is it correct that you don't
16 document anywhere in your report how many
17 Americans have actually fired or pointed a gun,
18 instructed force type of situation, where the gun
19 was an AR-15 or AK-type or similar automatic
20 rifle?

21 A. I don't document that number, that's
22 correct.

23 Q. Is it also fair that even if you
24 consider all of the Americans who own an AR-15,
25 AK-type or similar semi-automatic rifle, that they

1 don't all necessarily own it for the purpose of
2 self-protection?

3 A. Oh, that's certainly true. They
4 don't all own them for self-protection. They're
5 owned for many, many legitimate reasons.

6 Q. Is one of those recreational
7 shooting?

8 A. It is.

9 Q. In your report, do you document
10 anywhere how many millions of law-abiding
11 Americans have used AR-15 AK-type or similar
12 semi-automatic rifles for recreational shooting?

13 A. I don't document a number, no.

14 Q. Is it correct that you don't document
15 anywhere in your report how many millions of
16 law-abiding Americans have actually used AR-15,
17 AK-type or similar semi-automatic rifles for
18 hunting?

19 A. I don't document a number. That's
20 correct.

21 Q. And you also don't document a
22 specific number for a law abiding American who has
23 used AR-15, AK-type or similar semi-automatic
24 rifles for pest control?

25 A. I do not document a number, no.

1 Q. Still on page 25 of your report.
2 This is number three on the report. Quote,
3 20-round and 30-round semi-automatic rifle
4 magazines are not large capacity ammunition
5 magazines as the New Jersey law misleadingly
6 states. To the contrary, these are the
7 standard-sized magazines for many of the
8 semi-automatic rifles addressed in this lawsuit,
9 end quote. Did I read that correctly?

10 A. You did.

11 Q. And what is your basis for making
12 this statement?

13 A. My knowledge of the firearms field,
14 my knowledge of how these rifles are sold and have
15 been sold. My knowledge of the fact that far and
16 away the most common sized magazine for an AR-15
17 is the 30-round magazine. The fact that the next
18 most common size is the 20-round magazine.

19 That small size magazines like
20 10-round and 5-round magazines are sometimes
21 available for things like target competition and
22 for use in states like New Jersey that prohibit
23 larger magazines. But they are far and away the
24 small, small minority of magazines made, sold,
25 used and owned for these rifles.

1 I've been using these rifles for the
2 last -- I don't know, 40 years or so. I'm just
3 doing that without doing the math. But, you know,
4 they're widely used all over. I've taught courses
5 with them. Many courses. I've been in
6 competition with them. I've seen them bought and
7 sold in gun stores. I've bought and sold rifles
8 of this sort. I know what kind of magazines are
9 commonly available and commonly used.

10 Q. Is there a way to take a magazine
11 with a capacity over 10 rounds and limit it just
12 to 10 rounds?

13 A. There are ways.

14 Q. For weapons that can accommodate
15 20-round and 30-round magazines, do any
16 manufacturers sell magazines with a 10-round
17 capacity?

18 A. Yes, I've said that. I've said that
19 10-round and 5-round magazines are available.

20 Q. I'm not sure we covered this, but do
21 you know what year the AR-15 first became
22 available for sale to the public in America?

23 A. Oh, I believe -- well, hold on a
24 moment. I may have noted something about it here.
25 Give me a moment, if you will.

1 I think sometime in the 1970s. I've
2 owned and used them since the 1980s. But I need
3 to look to be exact. But that's the approximate
4 range of years.

5 Q. Whenever it first became available,
6 what was the magazine capacity for that weapon at
7 that time?

8 A. When it first became available, I
9 can't tell you the answer to that. When we used
10 them in Vietnam, starting in the late 1960s or so,
11 we used both-20 round and 30-round magazines.
12 That was military usage. I can't tell you what
13 magazines were available to the public when they
14 first became available.

15 Q. If I were to represent that the
16 magazine capacity, when it first became available,
17 was five, do you have a reason to dispute that?
18 And again, I'm talking about what was available
19 for sale to the public.

20 A. I wouldn't dispute that. But I think
21 that very soon after that, if that's the case,
22 larger magazines were available.

23 Q. As to that, if I were to represent
24 that if magazines larger than 5 were not available
25 to the public until 1987, would you have a reason

1 to dispute that?

2 A. I don't think that's correct but I'm
3 not sure. I would have to look to know the exact
4 years.

5 Q. Still on page 25, paragraph 4, number
6 4, you state, and I quote, similarly,
7 semi-automatic pistol magazines with capacities
8 greater than 10 rounds, are not large capacity
9 ammunition magazines, but are, in many cases, the
10 standard sized magazines for those pistols.

11 A. Excuse me. What page are you on,
12 please?

13 Q. Page 25.

14 A. Thank you. I lost it. Page 25.
15 Page 25, did you say?

16 A. I did.

17 Q. You have to read me again what you
18 said because I'm not finding what I think you
19 read.

20 A. Paragraph 4. Quote, similarly,
21 semi-automatic pistol magazines with capacities
22 greater than 10 rounds are not large capacity
23 ammunition magazines, but are, in many cases, the
24 standard sized magazines for those pistols.

25 A. Yes, sir.

1 Q. And what is your basis for saying --
2 making this statement?

3 A. My knowledge of handguns in the
4 feild. I named several of them earlier in the
5 report. The Glock 17, which is probably -- was at
6 one point the most widely used police pistol in
7 this country and very popular in civilian use, has
8 a 17-round magazine. The Glock model 22, which is
9 a .40 caliber Glock, has a 15-round magazine. The
10 Browning high power has a 13-round magazine. I
11 list many other pistols earlier in my report with
12 magazine sizes over 10 rounds. They're not large
13 capacity magazines. They're the magazines that
14 come with those pistols. They're the standard
15 magazines for those pistols.

16 Q. So for those pistols or any others
17 that might have a standard size magazine that's
18 greater than 10 rounds, do manufactures sell
19 magazines that have only a 10-round capacity?

20 A. In some -- in some cases they do. In
21 many, many cases they do not. So that prevents
22 New Jersey residents from legally owning and
23 having those pistols unless they want --

24 Q. Which pistols?

25 A. -- unless they -- excuse me. Unless

1 they want to have a gunsmith custom modify
2 magazines by welding or some other means that
3 reduces the magazine size to 10 or less.

4 Q. And out of those pistols, which ones,
5 specifically are prohibited under New Jersey law?

6 A. Which pistols are prohibited under
7 New Jersey law?

8 Q. The ones that come with a standard
9 size greater than 10 rounds, but could be sold
10 with -- use magazines that only have 10 rounds?

11 A. I don't know. But I'm -- I -- if you
12 want me to make an interpretation of New Jersey
13 law, my interpretation would be that if you have
14 one of those pistols but only have the 10 round or
15 smaller magazines for it, it may be legal under
16 New Jersey. But that's -- that's just my guess as
17 to New Jersey law.

18 MR. VANNELLA: We're getting close to
19 1:00, counsel. Do we want to go to around 1:00
20 and take a break for lunch?

21 MR. SCHMUTTER: That's fine with me.

22 MR. VANNELLA: I can keep going but
23 I'm assuming you don't want to go straight
24 through.

25 MR. SCHMUTTER: How much -- well, I

1 guess one question is, how much more do you think
2 you have?

3 MR. VANNELLA: I have a ways to go.

4 MR. SCHMUTTER: Then we may as well
5 break at some point. That makes sense. Certainly
6 the witness -- I'll also leave it to the witness
7 when he's ready to take a break.

8 MR. VANNELLA: Are you fine to
9 proceed a little longer, Mr. Kapelsohn?

10 THE WITNESS: Certainly, if you take
11 a break at one, that's fine with me.

12 MR. VANNELLA: And also the court
13 reporter sake.

14 MR. SCHMUTTER: Always for the court
15 reporter.

16 BY MR. VANNELLA:

17 Q. Now, let's go back to page 12 of the
18 same report. I'll wait for you to get there.

19 On page 12, you state, quote, most
20 common magazine style for the AR-15 and the size
21 of the great majority of magazines being
22 manufactured and sold for the AR-15 is 30 rounds,
23 end quote.

24 A. Yes.

25 Q. What is your source for that

1 statement?

2 A. My knowledge of the firearms field,
3 in which I work on a daily basis.

4 Q. Now you use the term great majority.
5 How many is a great majority?

6 A. Most.

7 Q. So more than half, you mean?

8 A. Oh, yes. Certainly more than half.

9 Q. How much more than half?

10 A. I couldn't -- I couldn't tell you
11 that. But the significant majority of magazines
12 for AR-15s are 30-round magazines.

13 Q. Still on page 12, you state, quote,
14 the next most commonly seen magazine size is 20
15 rounds, magazines of 5, 10 and 40 rounds are also
16 available, as well as other sizes, but are
17 relatively rare?

18 A. Yes, sir.

19 Q. What is your basis for that
20 statement?

21 A. My knowledge of the firearms fields.
22 My work in the firearms field. My work with AR-15
23 rifles. My visiting and traveling to gun stores
24 where rifles and magazines are sold, gun shows
25 where rifles and magazines are sold, ordering

1 magazines for AR-15 rifles.

2 Q. (Inaudible)

3 A. -- work for -- work for -- excuse me,
4 excuse me, excuse me, I'm not quite done. Work
5 for manufactures of AR-15 magazines.

6 Q. Is this -- is the same general source
7 of all your statements on page 12?

8 A. I have to look at all my statements
9 on page 12 to know if that's true or not.

10 Q. Well, why don't you do that.

11 MR. SCHMUTTER: Objection.

12 Ambiguous.

13 A. So you're asking whether my knowledge
14 and expertise in the firearms field, my experience
15 in working in this field for a lifetime, is the
16 source of my information for everything on page
17 12. Is that what you're asking me?

18 Q. Yes.

19 A. Okay. Then give me a few minutes.

20 No, there are some things on page 12
21 that are clearly my opinions, such as saying New
22 Jersey -- the New Jersey law's limit of handgun
23 magazine size to 10 rounds imposes an unreasonable
24 restriction on New Jersey gun owners, and it goes
25 on.

1 There are some things that says, in
2 my opinion, estimates that there are currently 100
3 million or more 30-round AR-15 magazines in
4 circulation. It should say are, instead of and --
5 that's a typo -- are quite credible. That's an
6 opinion on my part based on my knowledge.

7 But in general, the things in this --
8 on this page are based on my experience and
9 knowledge and work in this field.

10 Q. Well, these are all your expert
11 opinions you're offering, are they not?

12 A. Well, I think there's a difference
13 between saying an AR-15 is a semi-automatic rifle.
14 That may -- you may say that's an opinion. I'm
15 going to say that's a fact. So some things are
16 facts. You know, saying -- I say standard size
17 magazines for M1 carbine are 15 and 30 rounds.
18 That's a fact. It's not exactly an opinion.

19 We can look up the specifications of
20 that gun that was used by us in several wars,
21 that's a fact. So no, I wouldn't agree that all
22 of these things are opinions. Some of them are
23 facts.

24 Q. All right. Well, then I'll just go
25 through each statement.

1 On page 12, you state, quote, with an
2 estimated 25 million AR-15 and AK-type firearms in
3 civilian hands in the United States, there are
4 certainly many times that number of 20 round and
5 30-round magazines in private ownership, as well.

6 A. Yes.

7 Q. What do you rely on in making that --
8 is that your opinion?

9 A. You have to tell me where you're
10 reading from. I'm looking for it.

11 Q. Third paragraph, page 12.

12 A. Third paragraph. Yes, it's my
13 opinion.

14 Q. What are you relying on in support of
15 that opinion?

16 A. However many rifles there are, there
17 are several magazines, at least, per rifle. I
18 don't -- I don't know of people who own an AR-15
19 with no magazines. So, users of AR-15s typically
20 own at least one magazine, most of them own
21 several. I know people who own 50 or 100. I --
22 I'm sure, myself, own dozens.

23 Q. How many people do you know who owned
24 more than one 20-round or 30-round magazine?

25 A. Many people.

1 Q. Can you estimate a number?

2 A. No, I can't estimate a number. But I
3 would say that of the firearms instructors I know,
4 through the various organizations I'm connected
5 with, on the board of directors of, I probably
6 know hundreds of people. Maybe more than that.
7 Maybe thousands of people, who each own one or
8 more AR-15s. Some own several. And I -- I would
9 be amazed if any of them didn't own several
10 magazines per rifle.

11 I've seen them come to classes,
12 courses and competitions with several magazines
13 per rifle. I don't presume that they stole them
14 some place. I presume they own them.

15 Q. Next sentence on page 12. You state,
16 quote, in my opinion, estimate that there are
17 currently 100 million or more 30-round AR-15
18 magazines in circulation are quite credible, end
19 quote. You already mentioned that was a typo, so
20 I used the word are instead of and.

21 A. Thank you.

22 Q. Is that otherwise correct?

23 A. That's otherwise correct, yes.

24 Q. And what is your basis for -- in the
25 opinion that this estimation is quite credible?

1 A. My knowledge of the field and my
2 understanding that -- well, I've seen, in print,
3 in one or more places, estimates that there are
4 currently 100 million or more 30-round magazines
5 in circulation.

6 That's based on things I've read.
7 And then it's my opinion that that's a credible
8 opinion, it's likely. That would be 25
9 magazines -- excuse me, that would be 4 magazines
10 per rifle. And as I've said, I know people who own
11 50 magazines or 30 magazines or 20 magazines. So,
12 for anyone who owns only one or two magazines,
13 there are people who own dozens of magazines.

14 MR. VANNELLA: Counsel, to the extent
15 Mr. Kapelsohn testified that he's relying in part
16 on written documentation supporting this opinion,
17 we would request that.

18 MR. SCHMUTTER: Please put that
19 writing and I'll look at it.

20 (Request.)

21 BY MR. VANNELLA:

22 Q. First sentence of last paragraph on
23 page 12. You state, quote, the New Jersey law's
24 limit of handgun magazine size 10 rounds imposes
25 an unreasonable restriction on New Jersey gun

1 owners, especially, but not only, to those with
2 concealed carry permits, end quote. Is that
3 correct?

4 Q. And I think you testified to this
5 before, but is that your opinion, as well, that
6 you were offering in this matter?

7 A. That is my opinion, yes.

8 Q. Is that your personal opinion or your
9 expert opinion?

10 A. I couldn't hear you.

11 Q. Is that your personal opinion or is
12 that an opinion you're offering as an expert?

13 A. Both. But I guess what I'm offering
14 in this case are my expert opinions. But it is my
15 personal opinion, also.

16 Q. As an expert, and you're offering
17 that opinion, why do you say that is the
18 unreasonable restriction?

19 A. Well, for a number of reasons. And
20 some of them are set out in these reports.

21 There are many excellent
22 semi-automatic pistols available where the
23 magazine size of the pistol is more than 10
24 rounds. Some of those are pistols where you can
25 find 10-round magazines available, so that you

1 could, I guess, comply with New Jersey law. Some
2 of them are not.

3 On the ones that are not, if you
4 wanted to use that model of pistol, you would have
5 to have some custom magazines made by a gunsmith,
6 welding them so they would only hold 10 rounds or
7 fewer than 10 rounds. That -- that's not a
8 reasonable thing to make someone go through.

9 Pistols, to be effectively and
10 well-useable, need to fit the user's hand. There
11 are many good pistols that are good for someone's
12 hand, but not good for someone else's hand, a
13 smaller hand, a woman's hand, a six foot five,
14 male hand. Whatever it might be.

15 People shouldn't be restricted to
16 only a certain -- certain number of pistols they
17 can pick and use in order to comply with New
18 Jersey law.

19 Then we get to the practical use of
20 the pistols. I say, especially those with
21 concealed carry permits. But let's say,
22 especially those who are going to use the pistol
23 for self-defense.

24 Decades and decades worth of police
25 statistics indicate that even trained police

1 officers miss the attacker with the majority of
2 the shots they fire. So a police officer may have
3 a 20 or 25 percent or 30 percent hit ratio, as
4 it's called. Or a whole department may. Or on a
5 nationwide basis, we may, during the course of the
6 year from the best statistics that are available.
7 That means that 65 or 70 or 75 percent of the
8 shots fired may miss the attacker.

9 So when someone has a concealed carry
10 pistol, that at most can hold 10 or 11 rounds, and
11 they may -- let's say that -- let's say their
12 marksmanship is no better than that of the highly
13 trained police officer, if they miss with 65 or 70
14 or 75 percent of the shots fired, then we're going
15 to assume that maybe three of the shots in that
16 pistol will hit the attacker.

17 Well, what if they're set upon by
18 three attackers on the street? We're going to
19 possibly run out of ammunition before we run out
20 of attackers, if you will.

21 It -- it's not the kind of pistol
22 that police would choose to defend themselves
23 with. Police departments don't pick pistols
24 anymore with 10-round magazines. Most of the time
25 they pick pistols with 15- 16- 17-round magazines

1 because of the understanding that more rounds are
2 better. And more rounds may be needed to properly
3 defend oneself. And that's what police are most
4 often doing with the pistol, is defending
5 themselves with it, but they're also defending the
6 public with it. Why are we limiting the member of
7 the public to a 10-round pistol? Or maybe now
8 we're going to require that member of the public
9 to carry the pistol and a spare magazine for the
10 pistol.

11 That's -- that's an unreasonable
12 burden. Most people don't choose do that when
13 carrying a concealed firearm on a concealed carry
14 permit. They carry the firearm itself and the
15 ammunition it holds, because another loaded
16 magazine is just more weight and another object.
17 And it's a limit to how many pockets the person
18 has and what other things they have to carry with
19 them.

20 So, those are some of the reasons why
21 I think it's unreasonable. In addition to which,
22 I just don't see any -- any necessity for this
23 kind of regulation. But that's my personal
24 opinion. Not a professional one.

25 Q. Sitting here now, can you identify

1 any -- any specific pistols that cannot be used
2 with only a 10-round magazine unless they're
3 modified, as you described it?

4 A. No, I would have to go start studying
5 and figuring out which ones the manufactures
6 provide 10-round magazines for. But it's a
7 minority of the pistols that are available on the
8 market. It's not -- it's not like you can get
9 10-round magazines for most of them. You can get
10 10-round magazines for some of them.

11 Q. So you gave several reasons why you
12 determined that it's an unreasonable restriction.
13 And again, one of them was because it limits the
14 available pistols. So your -- is it -- are you
15 saying that unless all pistols are available for
16 public use, anything that restricts any particular
17 pistols is an unreasonable restriction?

18 A. I don't know I would say unless all
19 pistols are available for public use, but -- but
20 the fact is this -- this prevents people from
21 owning, lawfully owning, in New Jersey, many
22 pistols that are available on the market.

23 And now we take those magazines that
24 we've paid some gunsmith to weld -- weld shut so
25 that they only hold 10 rounds or fewer. Some day

1 when you go to sell that pistol, to someone, maybe
2 someone not in New Jersey, maybe you're selling it
3 across the country, as is done by federal firearms
4 licensees, no one -- no one is going to pay you
5 more than a couple of dollars for this magazine
6 that you may have paid \$50 to have created because
7 nobody wants that magazine that's been butchered
8 in that way.

9 Q. Sitting here today, are there -- are
10 you -- is it your testimony that there are no
11 pistols that can hold a 10-round magazine that
12 would not be suitable for someone who is -- who is
13 relatively -- like you said, a woman or a weak
14 person or -- are there pistols available?

15 MR. SCHMUTTER: Objection. Objection
16 to the form of the question. It's confusing
17 ambiguous and unclear.

18 A. I am confused.

19 Q. You said before that there are
20 certain pistols, you mentioned women, but for
21 people -- not everyone is of the same level of
22 strength. Is that correct, Mr. Kapelsohn?

23 A. Strength or hand size or hand shape,
24 all of those things are factors.

25 Q. So, all of those factors in

1 consideration, is it your testimony there are no
2 pistols that can hold, you know, a standard
3 10-round magazine that would not be suitable for
4 those type of uses?

5 MR. SCHMUTTER: Same objection.
6 Unclear. Ambiguous.

7 A. When you say a standard 10-round
8 magazine, you mean that is the size magazine the
9 pistol comes with, that it is designed size?

10 Q. Correct.

11 A. No. I'm not saying that there is no
12 pistol in the world that might not be suitable for
13 a small-handed individual. I'm not saying that.
14 I'm saying it greatly reduces the choices that are
15 available, the options that are available.

16 Q. How many rounds of ammunition would
17 you say are needed in a self-defense situation?

18 A. I guess --

19 Q. If it's one-on-one?

20 A. I guess that all depends on the
21 situation, doesn't it? I just finished working
22 for the public defender of the county next to us,
23 in a case where a gang member was shot 14 times
24 with .9 millimeter, including one shot in his eye
25 socket, after which he drove 70 yards, jumped out

1 of his car and ran 150 or 200 yards. And he's now
2 in jail. But very much alive. So how many rounds
3 are needed depends on the situation. There's no
4 way to say that with surety.

5 That's why we, generally, most people
6 who have common sense, prefer to carry a firearm
7 that holds as many rounds as possible. Because
8 there's no way to tell how many rounds you will
9 need.

10 Q. Are there any studies on the number
11 of rounds that are normally fired in a
12 self-defense situation?

13 MR. SCHMUTTER: Objection.
14 Ambiguous.

15 A. There have been some studies, I
16 guess. Whether they are credible or accurate or
17 not, I don't know. I think one of your experts,
18 Lucy Allen, I think, points to a study or does a
19 study that she comes up with 2.2 rounds as the
20 average.

21 I don't know what that means. It
22 still doesn't mean that the fella that defended
23 himself in the case I just told you about, didn't
24 fire 18 rounds, because he did. He fired 18, and
25 hit with 14 of them. And a jury found it was

1 self-defense. So that's a self-defense situation.
2 I doubt that that is one of the statistics in Lucy
3 Allen's study, because I think she says, she
4 didn't use any examples where the person fired
5 more than 10. Well there's one where the person
6 fired more than 10. I worked in the case.

7 Q. Well, Miss Allen's report speaks for
8 itself.

9 A. Yes, it does.

10 Q. I'll ask you questions about that
11 later. But you understand what is meant by the
12 word average? We're talking about average number,
13 correct?

14 A. Well, it could mean median or mode or
15 you can -- average can mean several things, as you
16 know.

17 Q. But whether it's median or mode, as
18 you know, correct, whether we have an average
19 number, that means there are some numbers that are
20 less than the average number, correct?

21 A. Yes.

22 Q. And there are some numbers that are
23 more than the average number, correct?

24 A. Usually, yes.

25 Q. Have you done any studies on the

1 number of rounds that are usually used in
2 self-defense situations?

3 MR. SCHMUTTER: Objection.
4 Ambiguous.

5 A. Studies in the sense of statistical
6 studies? No. I have a lifetime of experience
7 dealing with self-defense shooting cases and
8 police shooting cases and shootings by private
9 individuals.

10 Q. Page 13 of your report.

11 THE WITNESS: I think your court
12 reporter is going to expire here soon. It's 12
13 minutes after 1. I don't know when you want to
14 take that break.

15 MR. VANNELLA: I have one more line
16 of questioning and then that would be a good place
17 to take a break.

18 BY MR. VANNELLA:

19 Q. On page 13 of your report, the last
20 sentence of the first paragraph on that page. You
21 state, as a question, if police officers need
22 handguns holding 16 to 18 rounds to protect
23 themselves and the public, why should gun owners
24 in New Jersey be limited to fewer rounds to
25 protect themselves and their loved ones? Is that

1 correct?

2 MR. SCHMUTTER: Objection.

3 Misrepresents the record.

4 A. Well, you didn't read it correctly,
5 but go ahead.

6 Q. You read it then, that sentence.

7 A. Well, you read -- you combined two
8 sentences. One sentence -- I'll read two
9 sentences.

10 Most police nationwide, including in
11 New Jersey, carry handguns --

12 Q. I did not read that sentence. I read
13 the last sentence of the paragraph. I'll read
14 that last sentence again.

15 Quote, if police officers need that
16 many rounds to protect themselves to the public,
17 why should gun owners in New Jersey be limited to
18 fewer rounds to protect themselves and their loved
19 ones?

20 A. Well, with all due respect, with due
21 respect, that is not the sentence you read a
22 moment ago, and I think the record will show it.
23 You read a sentence a moment ago that included 16
24 to 18 rounds, which is in the previous sentence.

25 Q. All right. You're correct. I

1 assumed --

2 A. So don't brow beat me about something
3 on which I'm correct and you're incorrect.

4 Q. I didn't read two sentences either,
5 Mr. Kapelsohn. And don't ask me questions.

6 A. I didn't. I told you something -- I
7 told you something.

8 Q. When you say that many rounds in that
9 sentence, do you not mean 16 to 18 rounds?

10 A. Yes.

11 Q. Yes? I'm sorry, I --

12 A. Yes.

13 Q. Turning now to page 25 of your
14 report.

15 A. I'm there.

16 Q. Paragraph or number five, quote, AR
17 rifles and similar rifles are accurate, reliable,
18 safe and easy to use effectively, which is why
19 these rifles are often the firearms chosen by law
20 enforcement and by private individuals for
21 defensive use, end quote. Is that accurate?

22 A. Well, it says AR-15 rifles and you
23 just read AR rifles. But other than that, it's
24 accurate.

25 Q. Would you not agree there are

1 different reasons why law enforcement officers
2 would use force and why private civilians would?

3 A. In some instances, yes. In others
4 not.

5 Q. And is that -- would that include use
6 of firearms?

7 A. Yes.

8 Q. Would you agree that law enforcement
9 officers may lawfully use firearms in situations
10 that private civilians would not it?

11 A. That's a correct statement about some
12 situations, yes.

13 Q. Is it your opinion that whatever
14 weapons ammunition are available to law
15 enforcement officers, should also be available for
16 civilians?

17 A. Not necessarily in all cases, no.

18 Q. What weapons should not be available
19 to civilians that are available to law enforcement
20 officers?

21 A. Well, it's not an issue in this case.
22 But in New Jersey, for instance, automatic
23 weapons, fully automatic weapons are not available
24 to civilians. They are available to civilians in
25 many other states around the country.

1 But, if you say, well, is it my
2 argument in this case that civilians should have
3 fully automatic weapons in New Jersey? No. It's
4 not part of this case.

5 Q. That was not my question. My
6 question was, do you believe, is it your opinion,
7 that there are certain weapons that law
8 enforcement officers are able to have that private
9 civilians do not need have?

10 MR. SCHMUTTER: Objection. Outside
11 the scope of the record.

12 A. I would agree with that as a general
13 statement. I think probably tasers are another
14 example of something that law enforcement has in
15 New Jersey and private individuals, if I
16 understand the law correctly, are not allowed to
17 have.

18 Q. My question is not what is legal or
19 not under New Jersey law. My question is -- let
20 me rephrase it.

21 Do you believe, as your opinion, that
22 private civilians should have access to be able to
23 own, possess and use any and all weapons that law
24 enforcement officers can use?

25 A. No, not necessarily, I think, is my

1 answer.

2 Q. Okay. And then my question was, what
3 types of weapons? And my question is not what is
4 or isn't legal under New Jersey law or any other
5 law. What type of weapons should -- do police
6 officers, law enforcement officers have, that you
7 don't believe private civilians should necessarily
8 have?

9 A. Grenades.

10 MR. SCHMUTTER: Objection.

11 THE WITNESS: Excuse me?

12 MR. SCHMUTTER: I made an objection.
13 The question is outside -- the information is
14 outside the scope of the record.

15 A. One thing I would think of would be
16 grenades, which are generally considered to be
17 destructive devices protected by federal law for
18 civilians, but permitted to be used by police in
19 certain forms.

20 Q. Why do you say grenades?

21 A. Because --

22 MR. SCHMUTTER: Same objection.

23 A. You asked me for examples.

24 Q. And now I'm asking you why you gave
25 that example?

1 A. It's just something that occurred to
2 me that is not -- not commonly in civilian usage.
3 And it's harder for me to think of situations in
4 which civilians -- by civilians, understand, I'm
5 using the term civilians to mean private
6 individuals who are not police, our police are
7 civilians too, they're not military police.

8 But I'm using the term civilians
9 because that's what most people use. It's harder
10 for me to imagine situations in which many
11 civilians would have legitimate use for grenades.
12 Because they're destructive devices, they destroy,
13 they can in fragmentation form, for instance, or
14 even in certain other forms, they destroy things
15 within an area.

16 They're not specific as to who they
17 -- whom they harm or what damage they do. So, I
18 think there's more of a legitimate federal basis
19 for saying that's a destructive device, civilians
20 shouldn't have that.

21 Q. But if used in a certain way, could
22 they not also be used as instruments for
23 self-defense?

24 MR. SCHMUTTER: Same objection.
25 Outside of the scope of the record and the

1 reports.

2 A. Conceivably, they could. Most
3 anything could. But you asked me for examples and
4 so I'm giving you one.

5 Q. So I understand -- so if I
6 understand, your testimony is that grenades should
7 not necessarily be available to the public even if
8 they're available to law enforcement?

9 A. I'm trying to come up with an
10 example.

11 MR. SCHMUTTER: That's not his
12 testimony. You just made that up. I'm sorry,
13 that not what he said at all.

14 BY MR. VANNELLA: Then he can say so,
15 Dan. All right?

16 MR. SCHMUTTER: I understand that.
17 But you're mischaracterizing the record.

18 MR. VANNELLA: Then he can correct
19 me. That's how I understood his answer.

20 MR. SCHMUTTER: And I'm making an
21 objection.

22 BY MR. VANNELLA:

23 Q. Was that your answer, Mr. Kapelsohn?

24 A. That was not my answer, no.

25 Q. So your answer was, it is a more

1 destructive radius, but you don't mean that to say
2 that it's particularly unsafe?

3 MR. SCHMUTTER: Objection.

4 A. I didn't say that either.

5 MR. SCHMUTTER: Objection.

6 Interprets the record.

7 Q. What did you say again?

8 A. I -- rather than try to remember what
9 I said four questions and answers ago, I would ask
10 the court reporter for it, if you would like to
11 hear it again.

12 MR. VANNELLA: Yes. Court reporter,
13 please, recite.

14 (The court reporter read back the
15 referred to answer.)

16

17 BY MR. VANNELLA:

18 A, Thank you. So when you gave that
19 statement, you're not saying that that is --
20 sorry, are we back on the record court reporter?

21 THE WITNESS: We're on the record.

22 Q. When you made that statement that was
23 just read back, are you -- did you not intend that
24 to mean that it -- it -- what -- what did you
25 intend that to mean then? That it can't be --

1 shouldn't be used because it -- it could harm more
2 people than was intended by the person using it?

3 MR. SCHMUTTER: Objection.

4 Ambiguous. Compound question, unclear.

5 A. I intended it to answer the specific
6 question you asked. You're now putting other
7 things on it.

8 Q. Well, it's unclear to me when you say
9 it has a wider destructive radius or whatever your
10 terminology was. What do you mean by that?

11 A. If we take something, like a
12 fragmentation grenade, a military fragmentation
13 grenade, it has a destructive radius around it.
14 All of the use of defensive firearms that we make
15 in the training classes, in the rules that apply,
16 the safety rules, the tactics that apply, the laws
17 that apply, have to do with the concept of someone
18 firing with precision, with what is called target
19 isolation. Meaning you're going to be firing at
20 the threat, the human being that is the deadly
21 threat to you or others, not that you're going to
22 kill anyone who happens to be on that playground
23 at the time, or anyone who happens to be in that
24 shopping mall within 25 meters of where the
25 grenade explodes.

1 So it's something that has perhaps a
2 proper usefulness in a war, but much harder to see
3 situations where it has a proper usefulness in
4 private individuals defending themselves and their
5 loved ones because of that radius of destruction
6 that is uncontrolled.

7 Q. But you would -- you could not -- you
8 would not agree that the same could be said for
9 semi-automatic rifles and guns that have large --
10 larger than 10-round magazines?

11 A. No, not at all. A semi-automatic
12 firearm fires one shot each pull of the trigger.
13 So whether the magazine holds 7, 10, 11, 14 or 30,
14 you're getting one shot for each pull of the
15 trigger. They can be aimed precisely.

16 The tremendous advantage of them in
17 law enforcement compared to the officer's handgun,
18 or for that matter shotgun that was carried for
19 years, in most every patrol car or many control
20 cars, is that the rifle can be shot with great
21 precision.

22 So you can shoot and hit this person
23 without endangering people in other -- other
24 areas, down the street, down the block, on the
25 other side of the room, the other side of the --

1 of your driveway or whatever it is.

2 Does that mean that everyone is a
3 precise shooter? No. Of course not. Every
4 police officer is not. But it means that the
5 semi-automatic rifle or pistol can be shot with
6 precision, so that the person can address a
7 specific deadly threat without unreasonably
8 endangering others. And the fact that it's a
9 semi-automatic, doesn't make anything different
10 about that than if it were a lever action or a
11 bolt action or a pump action. And the fact that
12 it has a 12-round magazines doesn't make it more
13 harmful to others in that situation I've
14 described, than if it had a 10-round magazine or a
15 9-round magazine.

16 Q. But in that situation, the person
17 firing a gun could fire 12 bullets before the
18 magazine --

19 A. Yes, they could. And that could be --

20 MR. SCHMUTTER: Objection. What is
21 your question? That's not a question.

22 MR. VANNELLA: I was not finished.

23 THE WITNESS: Oh.

24 MR. VANNELLA: I'll repeat it.

25 BY MR. VANNELLA:

1 Q. In your scenario you gave for a
2 person that has a 12-round magazine would be able
3 to fire the gun 12 times before emptying the
4 magazine as opposed to whether it's 10 or 9,
5 right?

6 A. That's correct.

7 Q. How many shots per minute in your
8 experienced training equal (inaudible) in a
9 semi-automatic rifle (inaudible) how many shots
10 per second could a person handling the weapon
11 fire?

12 A. That question was all broken up.

13 MR. SCHMUTTER: Objection.
14 Ambiguous, undefined.

15 Q. Can you give me any sort of estimate?

16 A. I couldn't understand the first
17 question because you were breaking up, is what I
18 tried to say.

19 Q. If you're trained in handling and
20 firing a semi-automatic rifle, about how many
21 shots per second could that person fire?

22 MR. SCHMUTTER: Objection. Ambiguous
23 and undefined, no foundation.

24 A. And hit something? Or you're just
25 talking about how fast can one fire multiple

1 shots? Like --

2 Q. I didn't ask about hitting something.

3 I asked how many shots could be fired?

4 A. That's what I'm trying to find out.

5 MR. SCHMUTTER: Same objection.

6 A. So you could conceivably fire five,
7 six, maybe even seven shots per second with a
8 semi-automatic pistol, a semi-automatic rifle, or
9 for a trained shooter, a revolver for that matter.

10 Q. You mentioned grenades. Sitting here
11 today, is there any other weapon that you would
12 say should not be available to private civilians,
13 though they are available to law enforcement
14 officers?

15 MR. SCHMUTTER: Objection. Outside
16 the scope of the report and outside of the scope
17 of the record. Calls for speculation.

18 A. I don't know what all weapons are
19 available to police. I know that there are
20 launchers that police use for less lethal
21 munitions that are 37 and 40 millimeter. There
22 are several brands and types. I've used them.

23 And I think some of those launchers
24 can launch grenades of those caliber. Probably
25 those are some things that are prohibited for

1 private ownership. And in the same way that the
2 grenades are limited, they may, I think,
3 reasonably be limited.

4 Q. Are there any others?

5 MR. SCHMUTTER: Same objection.

6 Calls for speculation. No foundation. Outside
7 the scope the reports and the record.

8 A. I'm sure there are. I think that the
9 taser -- not the model available to the general
10 public -- but the police models that go further
11 and have more power may reasonably be limited to
12 police.

13 Q. Why is that?

14 A. I think they have a less foreseeable,
15 less likely use in self-defense situations than
16 law enforcement situations where we are responding
17 to crimes in progress and apprehending people and
18 so forth.

19 Q. But from both situations, wouldn't
20 the objective of using a taser to be to disable
21 the person you're using a taser on?

22 A. That's true.

23 Q. Is it fair to say that what you
24 described as police -- the type of taser that is
25 available to police officers is more powerful than

1 the one that is available to civilians?

2 A. I believe it is. It also has greater
3 range. The one -- the taser which is now -- Axon
4 Corporation sells to the public, has a 15-foot
5 length limit for the taser cartridges. The police
6 typically use 21- and 25-foot cartridges and even
7 some longer cartridges. And it's harder to see
8 those being likely necessary in civilian
9 self-defense uses, as opposed to the shorter range
10 cartridges.

11 Q. Any others besides tasers that are
12 available to police but not civilians?

13 MR. SCHMUTTER: Objection. Calls --
14 same objection. Calls for speculation, outside of
15 the scope of the reports and the record.

16 A. I would have to give this some
17 thought. This is something that was not part of
18 what I was asked to do. It's not part of my
19 report. And rather than sit here and try to come
20 up with examples on the spur of the moment, I
21 would need to give this a lot of thought, I think.

22 Q. I think now is a good time to break
23 for lunch.

24 (Discussion held off the record.)

25 (A break was taken.)

1 MR. VANNELLA: Back on the record
2 for Mr. Kapelsohn's deposition.

3 BY MR. VANNELLA:

4 Q. Mr. Kapelsohn, during the break, did
5 you speak to Mr. Schmutter or anyone else
6 regarding your deposition testimony?

7 A. No.

8 Q. I have a few more questions on
9 Kapelsohn Exhibit 1, which is again your June 15th
10 report. I want to direct your attention to what
11 you (inaudible) the exhibits of that report?

12 A. I'm sorry, exhibits what?

13 Q. Exhibits 2 through 8 of that report.
14 I ask that you review them and confirm that
15 they're all -- they are each newspaper articles,
16 or news articles of some sort.

17 A. Hold on a second. They all seem to
18 be news articles of some sort, yes.

19 Q. (Inaudible) --

20 A. You're breaking up.

21 Q. How did you come upon finding those
22 articles?

23 A. I think I had those articles. This
24 is -- I think. I'm not positive. But I think
25 I've had those articles from the time of Miller

1 verses Becerra. But how I got them, I'm not sure.
2 I'm not sure whether I got some of them and
3 counsel provided some, or whether I got them all
4 or what.

5 Q. Did you take any actions to verify
6 yourself whether those articles were accurate or
7 not?

8 A. I did not.

9 Q. Why (inaudible) including those
10 exhibits with your report?

11 A. Just as a handful of examples where
12 people have apparently used AR-15 rifles for
13 defending themselves and others, because some of
14 the states' experts, like I think Mr. Yurgealitis,
15 take the position that it's not an appropriate
16 weapon for self-defense.

17 And I think that large numbers of
18 people disagree with that, and keep them, buy
19 them, keep them for self-defense. And these are
20 just a handful of examples, only intended to be a
21 handful. And I say in my report, I'm sure you can
22 find much more, many more, of a situation where
23 people have used them for self-defense, including
24 examples where there were multiple attackers and
25 so magazine size becomes an issue.

1 Q. So your understanding is that each of
2 these articles addresses the use of the
3 semi-automatic rifle in self-defense?

4 A. I haven't looked back in detail at
5 Exhibits 2 through 8, but that's my recollection.
6 I would have to look at them to tell you for sure
7 that each one did.

8 Q. Is it your understanding that the
9 people who were using these rifles in self-defense
10 all stopped the threat against them by firing
11 their rifle and hitting someone or by using the
12 rifle.

13 A. No, at least one of them that I
14 recall, is one where someone stopped his neighbor
15 from being stabbed just by appearing with the
16 rifle and pointing the rifle and giving some
17 verbal commands or something of that sort, without
18 firing at all. There may be more than one such
19 example.

20 Q. But the ones -- the other ones
21 involved firing the rifle and hitting someone with
22 the bullet?

23 A. Again, I --

24 Q. Okay.

25 A. If you want the specifics of each of

1 these six or seven cases, I have to look back at
2 them. I don't recall them as specifically as what
3 you're asking, one way or the other.

4 Q. Is it fair to say that your
5 understanding of the incidents depicted in these
6 articles is limited to what the articles
7 themselves say?

8 A. That is correct.

9 Q. Is it -- are you away of any of the
10 articles (inaudible) that more than ten bullets
11 were used by the person that was firing the gun in
12 self-defense?

13 A. I do not know whether they were or
14 not. I think some of these articles don't
15 necessarily say how many shots were fired.

16 Q. I want to turn now to page 16 of your
17 June 15th report.

18 A. Okay. I've got page 16.

19 Q. (inaudible) paragraph (inaudible)
20 paragraph.

21 MR. SCHMUTTER: I'm sorry. I didn't
22 hear you. You're cutting in and out. I'm sorry.

23 BY MR. VANNELLA:

24 Q. Third paragraph on page 16, first
25 sentence, I will read it, quote, numerous other

1 cases in which the AR-15 and other semi-automatic
2 rifles have been used in self-defense can be
3 found, end quote.

4 A. Yes.

5 Q. And -- and what are you relying on
6 when you say there are numerous other cases?

7 A. My general knowledge of the field and
8 the fact that I've heard of or read of other such
9 cases over the years, other than these few
10 examples that I had news articles for that I put
11 in as exhibits in my report.

12 Q. When you are using the term
13 self-defense, can you explain exactly what you
14 mean when you say that?

15 A. I mean, defense of one's self or
16 other innocent persons against a threat of,
17 typically the legal requirement is death or
18 serious bodily harm. In some states, it's called
19 serious physical injury, serious bodily injury.
20 It amounts to the same thing.

21 Q. So the person who is presenting that
22 threat of harm, they're not acting in self-defense
23 themselves, correct?

24 A. Well, typically not. If you're
25 asking me to imagine every possible situation that

1 might exist, you could have a situation where both
2 individuals believe they are acting in
3 self-defense. But that's not the way I'm using
4 the term.

5 Q. I'm just trying to make sure we're on
6 the same page when we're talking about
7 self-defense incidents. And what my questions and
8 your answers generally mean is, when someone is
9 defending themselves from another attacker,
10 they're acting in self-defense and the attacker
11 generally would not be, correct?

12 A. Well --

13 MR. SCHMUTTER: Objection to the form
14 of the question. Ambiguous and confusing.

15 A. Well, for it to be self-defense, the
16 way I'm using that term, it's got to be someone's
17 use of force to protect themselves or other
18 innocent people from an unlawful threat of death
19 or serious bodily harm. So, in other words, it
20 wouldn't be firing at a police officer who is
21 firing at you because you're a bank robber. You
22 may be trying to defend yourself from being hit as
23 a bank robber. But that is not what I would call
24 self-defense. You're defending yourself against
25 an unlawful use of deadly force against you or

1 some other innocent person.

2 Q. Do you know how many cases you
3 (inaudible) last involved in semi-automatic rifles
4 involved in self-defense in the United States?

5 A. I couldn't hear the first six or
6 eight words that you said.

7 Q. Do you know how many cases or
8 incidents in the last ten years in the United
9 States involved the semi-automatic rifle used in
10 self-defense?

11 A. I do not.

12 Q. Do you know how many cases or
13 incidents in the last ten years in the United
14 States involved the unlawful use of force with
15 (inaudible) a semi-automatic rifle?

16 A. The -- did you say the unlawful use
17 of force by a semi-automatic rifle? Could you
18 hear me?

19 Q. Yes. And my answer was yes.

20 A. I could not hear an answer. We're
21 not doing too well here with the communications
22 system.

23 So the question was, do I know how
24 many unlawful uses of force with semi-automatic
25 rifles there have been in the last ten years?

1 Q. Yes, in the United States.

2 A. I don't know an exact number. I have
3 a general impression, not of an absolute number,
4 but of percentages based on the FBI's uniform
5 crime reports, which is part of the annual crime
6 in the United States reports that the FBI puts
7 out.

8 Q. And do you have that number?

9 A. I don't have an absolute number. And
10 rifles altogether, both semi-automatic and all
11 other rifles are used in some number under 2
12 percent of all homicides and, I believe, of crimes
13 in general. I think the number may be something
14 from year to year like 1.6 percent, 1.7 percent,
15 1.4 percent. It's a small percentage compared to
16 the homicides committed with handguns. And, in
17 fact, the homicides committed with blunt objects,
18 like hammers and pool cues and table legs and
19 other objects, and hands and fists and feet, small
20 number in comparison.

21 Q. But you don't know the actual number
22 or an estimate of the actual number, as opposed to
23 a percentage?

24 A. No, but it can be derived from those
25 same tables, because they give total numbers of

1 homicides in the United States. And so if they
2 then tell you that 1.4 percent of them are
3 committed with rifles, you can just do the
4 arithmetic and come up with the numbers, come up
5 with numbers at various points. I don't have them
6 in my head.

7 Q. But you don't know how many uses in
8 self-defense there's been in the last ten years
9 with semi-automatic rifle? Is it fair to say you
10 couldn't say what percentage of uses of a
11 semi-automatic rifle were self-defense versus
12 unlawful use?

13 A. I can't say absolute numbers.

14 MR. SCHMUTTER: Objection.
15 Ambiguous.

16 A. I can say -- I can say that the
17 various studies of how many uses of firearms there
18 are annually in self-defense have numbers ranging
19 from 400 to 600,000 to, in some cases, two million
20 depending on who has studied it and what
21 parameters they used and what methods they used,
22 and those include studies by the calculations by
23 the federal government.

24 So the use of firearms defensively
25 dwarfs the number of criminal firearms every year.

1 That's not to say criminal uses are not important
2 and should be remedied and so forth, but far more
3 uses of firearms in self-defense than in crime.

4 MR. VANNELLA: Counsel, we'll request
5 any of the data that Mr. Kapelsohn is referring to
6 in his answer.

7 MR. SCHMUTTER: Just put it in
8 writing, and we'll have a look at the request.

9 (Request.)

10 BY MR. VANNELLA:

11 Q. In an incident of a firearm of any
12 type used for self-defense, do you know if the
13 firearm is more likely to be a semi-automatic
14 rifle or nonsemi-automatic rifle such as a
15 handgun?

16 A. Well, a handgun --

17 MR. SCHMUTTER: Objection. Ambiguous
18 and confusing.

19 A. Well, a handgun is not a
20 nonsemi-automatic rifle. A handgun is not a rifle
21 at all. I don't understand.

22 Q. So it is a nonsemi-automatic rifle,
23 correct.

24 MR. SCHMUTTER: Objection. Not what
25 his testimony was.

1 A. I don't understand that question.

2 Q. Do you know in a self-defense
3 incident whether more incidents are the use of a
4 semi-automatic rifle as opposed to a firearm other
5 than a semi-automatic rifle?

6 Q. Again, I don't have absolute numbers.
7 But I believe that there are more firearms used in
8 self-defense that are not semi-automatic rifles
9 than that are semi-automatic rifles. I think that
10 probably the largest number, from what I've seen,
11 would be handguns. And thereafter, you have all
12 kinds of shoulder weapons, shotguns, rifles,
13 carbines, rifles of all action types, et cetera.

14 Q. Can you estimate any more than that
15 what percentage you're talking about --

16 A. No, I can't.

17 Q. -- of weapons?

18 A. No.

19 Q. On page 16 still, first sentence of
20 the fourth paragraph, and I quote, it is incorrect
21 and in fact a common myth that the .223/5.56
22 millimeter projectile fired by the AR-15 and other
23 rifles under consideration is too penetrative to
24 be used safely for self-defense inside and around
25 homes, businesses farms and ranches, correct?

1 A. Yes.

2 Q. And what are you relying on for
3 making -- when you make that statement?

4 A. My knowledge of the ballistics and
5 the penetrating ability of various cartridges.
6 And I give some further detail about the fact that
7 all of the commonly used handgun cartridges that
8 are used for self-defense are at least as
9 penetrative of the .223, sometimes more so. I
10 mentioned 00 buckshot, which Mr. Yurgealitis
11 recommends as being able to penetrate several
12 walls and so forth. So if this is a danger of the
13 .223 projectile, it's a danger of almost all
14 self-defense firearms projectiles, unless they're
15 carefully selected. And you can select .223
16 ammunition that is not as penetrative and not as
17 dangerous.

18 Q. How far does the .223/5.56 millimeter
19 projectile travel while still remaining lethal to
20 an adult?

21 MR. SCHMUTTER: Objection.
22 Ambiguous.

23 A. Under what circumstances?

24 Q. (Inaudible) fire (inaudible) -- no
25 walls, nothing that it penetrates.

1 MR. SCHMUTTER: Objection.

2 Ambiguous. No foundation.

3 A. Still need more details.

4 Q. What sort of details do you need?

5 A. If you're firing it with no
6 intervening barriers, then I need to know things
7 like at what angle are you firing it up in the
8 air, or is it being fired horizontal? What's the
9 topography? What's the wind drift? Things of
10 that sort.

11 Q. So depends on a lot of factors then,
12 in other words?

13 A. It does.

14 Q. Now, again, you state that it's a
15 common myth that this projectile is too penetrated
16 to be used safely. Are you saying that this
17 projectile does not penetrate walls?

18 A. Oh, no, not at all. It does
19 penetrate walls.

20 Q. So then are you saying it's a common
21 myth -- what do you mean by that?

22 A. Well, what I mean by that is, for
23 instance, when -- when the AR-15 first began to be
24 adopted by some police departments in this
25 country, people who are not especially

1 knowledgeable about the ballistics, some police
2 chiefs, police commissioners, city councils, and
3 so forth, said, oh, my God, you can't adopt that,
4 that's a rifle. It will go right through the
5 whole house and things like that, without a
6 knowledge of the penetrating abilities of the .223
7 compared to the 9 millimeter handguns or .40
8 caliber handguns or .44 caliber handguns that
9 officers were already carrying that would
10 penetrate in many cases as many or more walls of
11 the same house.

12 So it was a myth that because it was
13 a rifle, it would -- it would penetrate far more
14 walls, which might or might not be the case
15 depending on the kind of ammunition being used.
16 And I give examples in my report of kinds of
17 ammunition that can be selected that would be
18 safer to use inside a building, a house, or office
19 building.

20 Q. Just so I'm clear, is it correct that
21 you did not perform any experiments, testing this
22 projectile specifically for this?

23 A. First of all, that incorrect --

24 MR. SCHMUTTER: Objection. Ambiguous
25 and no foundation.

1 A. First of all, that's incorrect. I
2 already testified that I did test various
3 cartridges, shooting through sheetrock or plaster
4 board if you will, walls with 2 by 4 stud
5 construction. And I said that I would be willing
6 to bring in videos to show the court exactly what
7 I was talking about.

8 But also you just said, this
9 projectile. And when you say .223, it's not a,
10 this projectile. That's a caliber. The
11 projectile can vary tremendously, and I give
12 examples of the variation in my reports
13 themselves.

14 Q. I believe I already requested any
15 prior test before this litigation on this.

16 A. I don't have written records of prior
17 testing. It's things I've done in front of
18 classes, of instructors, classes of officers. I
19 can do it, again, and bring in videos to the court
20 or we can go out to a range and do it live. But
21 it's not something on which I have written
22 studies. I don't bother writing studies when I'm
23 demonstrating something to a class.

24 Q. But according to this report, you
25 state that, fourth paragraph, quote, the fact that

1 that was properly selected ammunition the
2 .223/5.56 millimeter, actually presents less
3 danger of overpenetrating walls, floors ceilings
4 and criminal attackers than conventional
5 self-defense handgun bullets and calibers such as
6 the .9 millimeter, .40 (inaudible) and .45 auto,
7 end quote.

8 So what do you mean by properly
9 selected ammunition?

10 A. I go on to explain that, I believe,
11 somewhere in this report. But, at any rate, the
12 lighter, faster bullets of soft point or hollow
13 point or polycarbonate tip design, that are more
14 likely to fragment sooner in walls and studs and
15 also less likely to overpenetrate, meaning come
16 out the far side of human beings that are shot
17 with them.

18 Q. And what would (inaudible) ammunition
19 be that is not properly selected?

20 A. What? I missed the first few words
21 of your question, sorry.

22 Q. What would be ammunition that is not
23 properly selected?

24 A. Well, there's military steel core
25 ammunition like the SS 109 round. There are the

1 heavier, significantly heavier bullets in .223 and
2 5.56 millimeter like the 68, 70 and 75 grain
3 bullets that are made for longer range target
4 shooting and for hunting large game animals.

5 Those would be poor choices for this.
6 Good choices would be, as I said, soft point,
7 hollow point or polycarbonate tip ammunition in
8 the lighter bullet weights, anything from about 36
9 grains to perhaps 55 grains.

10 Q. Do you know if civilians that are
11 purchasing ammunition are more often than not
12 purchasing the properly selected ammunition or the
13 nonproperly selected ammunition?

14 A. I think civilians buy all kinds of
15 ammunition.

16 Q. So you don't know what kind -- what
17 types are being purchased more by civilians?

18 A. The most commonly purchased
19 ammunition is practice ammunition, training
20 ammunition, that would be typically 55 grain full
21 metal jacket ammunition. Not a bad choice for
22 self-defense. Not the best choice for
23 self-defense. But that's most commonly purchased
24 because that's what people shoot at the target
25 range, at targets and shoot for recreational use.

1 Q. And what percentage is (inaudible) of
2 the total purchases are for those bullets?

3 A. Percentages I could not give you.

4 Q. I want to turn to what you mark as
5 Exhibit 9 of the June 15th report.

6 A. Yes, sir.

7 Q. What is this?

8 A. Exhibit 9 is an article by Taubert,
9 who is a retired FBI agent. I think I met him a
10 few times over the years who did studies of .223
11 penetration. And it's the subject we've about
12 talking about basically.

13 Q. Do you know if this was published
14 anywhere?

15 A. Oh, I believe it's been published in
16 a number of places. I've -- I have seen it and
17 read it from a number of sources over the years.
18 It's fairly commonly available and distributed.

19 Q. Do you know when it was first
20 published?

21 A. I couldn't tell you that, no.

22 Q. I want to turn to page six of this.

23 A. Yes, sir.

24 Q. And about halfway down there's a
25 paragraph that's in italics and also bracketed

1 beginning and end, do you see that?

2 A. Yes.

3 Q. Do you know if Mr. Taubert wrote
4 that?

5 A. Section that's in brackets? No, I
6 think it's an editor's note. It looks like at
7 this point Mr. Taubert's article goes into it and
8 talks about the topic, and I believe that's an
9 editor note, not Mr. Taubert's own writing.

10 Q. But it also includes information and
11 whoever is writing this, their disagreement with
12 the certain points that Mr. Taubert is making,
13 correct?

14 A. I would have to read it to see that.
15 You want me to read this section in italics to
16 myself and see what I can tell you?

17 Q. Well, I mean, we'll go to the
18 third -- second sentence of this paragraph and it
19 reads, quote, I disagree with Mr. Taubert's point
20 of view. And then it goes on. Do you see that?

21 A. Yes.

22 Q. (Inaudible) a person is who is
23 writing this and referring to themselves as I,
24 disagree with (inaudible)

25 A. I don't. I might be able to find

1 out. But I don't as I sit here today.

2 Q. Do you know who performed the tests
3 that are described in this exhibit, whether it was
4 Mr. Taubert or someone else?

5 A. I think they may have been performed
6 by several different individuals. I would need to
7 read it to give you that level of detail.

8 Q. Do you know if there's any other --
9 do you know -- are you aware of any of the source
10 material that is cited in this article?

11 A. I would have to reread it. It's a
12 while since I've read it. I've had this article,
13 referred to this article, used this article for
14 some years. But if you're asking me in that much
15 detail, I would have to reread it to be able to
16 answer those specific questions.

17 Q. And why are you relying on Exhibit 9
18 of your report?

19 A. Because it's very useful ballistic
20 information, the penetration ability of .223
21 ammunition. And by the way, as I glance through
22 it, I see that some of the testing in it was done
23 by Dr. Martin Fackler. Dr. Martin Fackler is dead
24 now. But he was one of the world's acknowledged
25 experts on wound ballistics, head of International

1 Wound Ballistics Association. He was a forensic
2 ballistition for the U.S. Army at El Presidio
3 facility in California. And the ballistic gelatin
4 commonly used today by the FBI and others is
5 called Fackler formula gelatin.

6 He's someone that I had a number of
7 communications with while he was still alive and
8 attended a number of classes with while he was
9 still alive. But I see that, in response to your
10 question, who did the actual testing, some of this
11 testing was done by Dr. Martin Fackler, according
12 to article.

13 Q. (inaudible) -- of your position that
14 .223 ammunition -- (inaudible) --

15 THE COURT REPORTER: We can't hear
16 you, Attorney Vannella.

17 BY MR. VANNELLA:

18 Q. Are you relying on Exhibit 9 in
19 support of your position that .223 ammunition is
20 unlikely to penetrate sheetrock?

21 A. No. I --

22 MR. SCHMUTTER: Objection. Form.
23 Misrepresents the record.

24 A. It does misrepresent the record.
25 I -- I've stated several times that it is likely

1 to penetrate sheetrock. So are normal
2 self-defense handgun bullets and so is 00 buckshot
3 used by police. They're all likely to penetrate
4 sheetrock. The question is how much and is one so
5 much more dangerous than the other that it should
6 be prohibited?

7 Q. Will those other bullets that you
8 mentioned penetrate soft body armor?

9 A. Typically not.

10 Q. Would those other bullets penetrate
11 military ballistic helmets?

12 A. Typically not.

13 Q. Would they typically penetrate
14 ballistic shields?

15 A. It depends on the shield. But often
16 not.

17 Q. Okay. I want to turn to page 9 in
18 this exhibit at the very top.

19 A. I'm there.

20 Q. So the -- under the heading,
21 defeating ballistic garments, the second
22 paragraph --

23 A. On page 9.

24 Q. Page 3.

25 A. Oh, page 3?

1 Q. Page 3, Exhibit 9.

2 Q. Oh, Exhibit 9, Page 3, hold on a
3 second, please. Yes, the section entitled,
4 defeating ballistic garments, is that it?

5 Q. First sentence of that second
6 paragraph, do you agree that the article is
7 concluding that .223 caliber bullets penetrate
8 soft body armor, military ballistic helmets and
9 many ballistic shields?

10 A. Yes.

11 Q. I want to turn to Exhibit 10 of your
12 report.

13 A. Yes.

14 Q. And what is this exhibit?

15 A. This is .223 testing and testing of
16 certain handgun calibers and shotgun ammunition in
17 terms of penetration through wallboard or
18 sheetrock, if you will, plasterboard.

19 Q. And where did you first find this
20 exhibit?

21 A. I don't remember where I first found
22 this exhibit. I used to teach it.

23 Q. Do you know --

24 A. I used to teach at Gun Sight, which
25 is part of the source of this exhibit.

1 Q. Do you know if this has been
2 published at all?

3 A. I believe it's been published.
4 Where? I couldn't tell you.

5 Q. Do you know who wrote the article?

6 A. No, I don't.

7 Q. Do you know who performed the tests
8 that are described in the article?

9 A. Not except to the extent that it
10 lists some people and makes some statements.

11 For instance, in the Gun Sight
12 section it says, thanks to Jack Furr -- Rick Furr
13 is a friend of mine. I've met Jack Furr, Ron
14 Benson, Pete Wright, Seth Nadel. I've met Seth
15 Nadel. So some of the people are listed. I don't
16 know that they're all listed.

17 A. I want to the turn now to Exhibit 11
18 of this report.

19 A. Yes, sir.

20 Q. What is Exhibit 11?

21 A. It's an article called, Why High
22 Powered, that's in quotes, high powered, 5.56
23 NATO/.223 AR-15 ammo is safer for home defense,
24 paren, FBI overpenetration testing, closed paren.

25 Q. Where did you find this article?

1 A. I think I had a copy of it or
2 multiple copies of it in my files. But it's from
3 an internet source called Prepared Gun Owners that
4 prints various information.

5 Q. What is Prepared Gun Owners?

6 A. It's a source on the internet. I
7 don't know the right term for it. I'm not a
8 high-tech person. A website. I don't know what
9 you call it.

10 Q. I want to turn back to the beginning
11 of page 19 of your report.

12 A. Yes, sir. I'm there.

13 Q. Second full paragraph, halfway down,
14 you write a sentence, and I'll quote it, pistol
15 grip on the AR-15 stock and pistol grips on the
16 stocks of other semi-automatic rifles and
17 shotguns, also do not allow these rifles to be
18 reloaded any faster than similar firearm without
19 pistol grips. Is that an opinion you're offering
20 in this case?

21 A. Yes.

22 Q. Have you ever conducted a test to
23 compare how fast you would be able to reload an
24 AR-15 rifle with a pistol grip compared to without
25 a pistol grip?

1 A. A test, no. I've trained many, many
2 people and done it myself. I've watched people
3 reload. I've watched people in competition.

4 Q. Are you aware of any published
5 results of testing by others on this point?

6 A. Not that I can recall at the moment.

7 Q. Would you agree that -- the pistol
8 grip, just -- does it have any practical use in a
9 semi-automatic rifle versus one that doesn't have
10 a pistol grip?

11 A. Yes.

12 Q. Is it a common feature on -- on those
13 weapons?

14 A. What's those weapons?

15 Q. On -- is it a common feature on
16 assault weapons?

17 A. Assault weapons? Now are we
18 including the handguns and shotguns that New
19 Jersey calls assault weapons? Or are we just
20 talking about semi-automatic rifles?

21 Q. It is the same definition of assault
22 weapons that we had an understanding on for this.

23 A. Well, pistol grips, unless we mean
24 the main grip of a pistol itself, pistol grips as
25 a separate holding device are not common on

1 handguns. They are very common on AR-15 rifles
2 and AK-47 type rifles and many other
3 semi-automatic box magazine-fed rifles.

4 Q. Is there -- are you aware of any data
5 or statistics that show how many weapons that are
6 defined as assault weapons in New Jersey have
7 common pistol grips or not?

8 A. Do you mean their original format
9 before they were made legal to be in New Jersey?
10 Or do you mean exist in New Jersey? I'm not sure
11 I understand the question.

12 Q. Exists in New Jersey.

13 A. I don't know how many of these.

14 MR. SCHMUTTER: Objection to form.
15 Ambiguous no foundation.

16 A. I don't know how many of these
17 firearms exist in New Jersey right now. There may
18 be statistics, but I don't have them.

19 Q. On page 21 of your report, very first
20 paragraph, you discuss bayonet mounts,
21 B-A-Y-O-N-E-T, correct?

22 A. Yes.

23 Q. And the last sentence of that
24 paragraph reads, and I quote, again, the New
25 Jersey statute's prohibiting of bayonet mounts,

1 while sensational, is largely superfluous,
2 correct?

3 A. Yes.

4 Q. Why do you say it's sensational for
5 New Jersey to regulate bayonet mounts?

6 A. Oh, because you say that to a group
7 of people who are not knowledgeable about
8 firearms, and I think the reaction is, oh, my
9 goodness, well, of course you're going to prohibit
10 bayonet mounts. Why would anyone need a bayonet
11 mount on your gun? Bayonets present about zero
12 effect in crime, you know, it's -- I'm not sure I
13 ever heard of a drive-by bayonetting. It's just a
14 non -- a nonfactor.

15 But the fact is that many firearms of
16 various sorts, AR-15s, M1 carbines, AKs and others
17 have bayonet mounts because that's how they were
18 made. And to prohibit it, is something that maybe
19 a bunch of legislators or news people can get
20 behind because, oh, why would any legitimate
21 person want a bayonet?

22 It's inconsequential. Bayonets
23 mounted on rifles are not used in crime. We
24 looked far and wide to find one or two instances
25 out of -- out of the last 50 years of rifle use in

1 the United States, I think.

2 Q. So it's not used for self-defense
3 either then?

4 A. I don't think so.

5 Q. What is the use of a bayonet mount,
6 other than it's how certain guns are built in the
7 first place?

8 A. Its use is to mount a military
9 bayonet for use in battle. And the fact is, most
10 of these firearms, most of these rifles, when sold
11 to the general public, are not sold with a
12 bayonet. Maybe some firearms collectors, some
13 World War II or World War I firearms collectors
14 are interested in having a rifle in its original
15 form and the bayonet that was issued to the U.S.
16 Army at some point in time or whatever. But it
17 has very little significance for self-defense, and
18 probably very little significance in crime,
19 either. It's just a way of designating some guns
20 that the New Jersey Statute wants to prohibit.

21 Q. (Inaudible) turning to page
22 (inaudible) six of your report.

23 A. I couldn't hear you.

24 Q. Page 26 of your report.

25 A. Yes, sir.

1 Q. (Inaudible) paragraph number nine,
2 second sentence, quote, prohibiting bayonet mounts
3 makes many excellent rifles and shotgun
4 unavailable for sale to or ownership by New Jersey
5 gun users, end quote.

6 A. Yes, sir. And shotgun should have an
7 S at the end of it. That's a type of shotguns,
8 plural.

9 Q. Understood. What's your basis for
10 making that statement?

11 A. Because I know of many firearms, for
12 instance, most 30 caliber U.S. carbines, many
13 shotguns, the Mossberg 590 is an example of one,
14 and other rifles, that are excellent firearms that
15 have legitimate uses by law-abiding individuals.
16 But the bayonet mount, being one of the -- I think
17 it's five characteristics that if you have more
18 than two of them, the gun is prohibited in New
19 Jersey, makes -- makes those guns illegal for
20 private possession.

21 Q. What percentage of rifles and
22 shotguns available today have bayonet mounts?

23 A. I couldn't tell you a percentage.

24 Q. Going back to page 21 of your report.
25 Actually, I'm sorry, I'm going to actually ask you

1 to go down to Exhibit 14 of your report.

2 A. Yes, sir. I'm at Exhibit 14.

3 Q. What is this exhibit?

4 A. I think it's a short article from
5 2019, from -- I think I got from the internet,
6 giving percentages of various violent crime that
7 happens during the nighttime versus during the
8 daytime.

9 Q. And just going by the the title of
10 the article, it's Violent Crimes Most Likely to
11 Occur At Night, end quote. Is that your
12 understanding of the conclusion?

13 A. That is my understanding of the
14 conclusion in general. And that's my
15 understanding of the similar statistics from other
16 studies like the FBI uniform crime report that
17 gives times of day when various crimes occur. The
18 point is that this was given in relation to was
19 the use of flash suppressors on rifles, keeping in
20 mind, that not all violent crime that occurs at
21 night, happens in dim-light conditions. It can
22 happen in a well-lighted interior area, or in a
23 well-lighted parking lot or what have you.

24 And similarly, not all crime that
25 happens during the daylight hours, happens in

1 well-lighted conditions. It can happen in a
2 basement without lights or a dark warehouse or a
3 movie theater with the lights turned off. But, it
4 gives a general idea that most violent crime
5 occurs during nighttime hours.

6 And so, it gives a general
7 understanding of the importance of flash
8 suppressors on rifles.

9 MR. VANNELLA: Counsel, to the extent
10 Mr. Kapelsohn referred to, I think, FBI data or
11 any other data other than this exhibit in his
12 answer, we would request that be produced.

13 MR. SCHMUTTER: Please put it in
14 writing and we'll have a look at it.

15 (Request.)

16 BY MR. VANNELLA:

17 Q. With regards to this article, Exhibit
18 14, do you know where the author obtained the data
19 they're relying on in the article?

20 A. It says in the article, according to
21 FBI data. I don't know whether the author did or
22 did not. But the FBI data is also available and
23 something I work with regularly. This was just a
24 very shorthand way of presenting a concept,
25 because it was two pages long, without someone

1 trying to look through a great deal of material to
2 get the idea of what I was saying.

3 Q. So what exactly is the function of a
4 flash suppressor?

5 A. It suppresses the muzzle flash of a
6 firearm. And in this case, we're typically
7 talking about a rifle.

8 Q. Is that for the benefit of the person
9 who is firing the rifle?

10 A. It is -- in our cases, our cases
11 being legitimate users of rifles, whether they be
12 police or private individuals or security
13 personnel, it is for the benefit of that person,
14 because otherwise the flash would be blinding to
15 them in dim light and it can take them several
16 long seconds or longer to recover and regain their
17 proper vision.

18 So if they're trying to use that
19 rifle in self-defense and they don't have a flash
20 suppressor, the flash can be very disruptive of
21 their ability to see and to fire accurately.
22 That's one purpose of flash suppressors, and I
23 mentioned others in my report.

24 Q. But that and any other benefits or
25 purposes of flash suppressors would apply for

1 anyone who is using the weapon with the flash
2 suppressor, regardless of their reasons for using
3 it, isn't that true?

4 A. That's true.

5 Q. That would include, you know, an
6 intruder or someone who is presenting an unlawful
7 use of force threat to someone else, correct?

8 A. That is true.

9 A. Back to page 26. And I'll direct you
10 to paragraph 11.

11 A. I'm there.

12 Q. First sentence reads, and I quote,
13 the prohibition of threaded muzzles makes many
14 excellent firearms unavailable for sale to or
15 ownership by a New Jersey gun user, end quote.
16 What is your basis for making this statement?

17 A. Many rifles, for instance, now come
18 from the manufacturer with threaded muzzles. They
19 may have threaded muzzles just threaded with a
20 protective cap on the threads, or they may have
21 threaded muzzles that have on them a flash
22 suppressor or a muzzle brake or what have you.
23 And it's one of the prohibited features in New
24 Jersey, I believe.

25 So it would make those guns

1 unavailable if they have the other combination of
2 features that makes them prohibited in New Jersey.
3 And to get around that requirement, you have to do
4 various things that are expensive and are
5 destructive of the firearm and that makes it
6 difficult to sell later on if you decide to get
7 rid of it, and many problems.

8 And in addition to which, if you
9 don't have those threads, you may not be easily
10 able to put on a muzzle brake, which is completely
11 legal in New Jersey, unlike a flash suppressor.
12 And there's a difficulty in many cases in
13 determining whether a given device is a protected
14 flash suppressor or a not prohibited muzzle brake.
15 In fact, it may serve both purposes. Many muzzle
16 brakes also serve a flash suppressing purpose.
17 And so someone using them at their -- at their
18 risk of violating a criminal law on something that
19 even the police who encounter that firearm may not
20 be able to determine, well, is this really a flash
21 suppressor or is it really a muzzle brake, but it
22 is a threaded muzzle.

23 Q. So for these weapons that have
24 threaded muzzles installed by the manufacturer, is
25 it possible to remove the threaded muzzle and

1 still be able to still have one able to use that
2 weapon?

3 A. In some cases, yes. And in some
4 cases wouldn't create difficulty. In other words,
5 I -- I have a .22 rifle with a threaded muzzle. I
6 have a positive caliber rifle that came from Ruger
7 with a threaded muzzle. They both have steel
8 protective caps on those muzzles. Well, you could
9 weld those caps in place, then you would have to
10 also, unless you wanted an ugly welding job on
11 your firearms barrel, you would have to then have
12 that reground and refinished, reglued, or you
13 could grind off the threads, in which case you
14 would have a completely butchered firearm, or you
15 could cut off the end of the barrel that has the
16 threads on it and remachine the end of the bore so
17 it wouldn't disturb the bullet on the way out.
18 But with some of those guns, they may already have
19 a legal minimum length barrel so you couldn't cut
20 off three-eighths of an inch of threading.

21 And then when you do all those
22 things, what do you do when and if you ever want
23 to sell that firearm to someone else? You're
24 trying to sell them a gun that's been butchered,
25 that's been deformed. And it's a difficult

1 situation.

2 Q. But the gun in that situation could
3 be fired and used, otherwise the way it's meant to
4 be used?

5 MR. SCHMUTTER: Objection.
6 Foundation.

7 A. If you did those various things,
8 maybe you could and maybe it wouldn't be as
9 accurate unless you had the muzzle crowned or
10 otherwise remachined you can't just take a
11 hacksaw and chop off the end of a rifle barrel and
12 expect it to be accurate as it was before. This
13 is machining job in a gun shop.

14 You're saying that to have this gun,
15 which everybody else in the United States buys the
16 way it is and uses the way it is, someone in New
17 Jersey either can't buy that gun or has to buy it
18 and then take it to a gunsmith and have them do
19 work on it, which costs money and takes time and
20 destroys the ultimate value of the gun.

21 Q. Everyone else in the United States
22 other than New Jersey can own and and purchase a
23 gun with a threaded muzzle?

24 A. Maybe not everybody in the United
25 States, but the vast majority of them. There's

1 only a few states that regulate this.

2 Q. Is your understanding of New Jersey's
3 law that threaded barrels are prohibited
4 altogether?

5 A. No, I think it's one of the factors,
6 one of those five factors. So you can't have a
7 gun with a flash suppressor or a threaded barrel
8 that would allow the attachment of a flash
9 suppressor. So in actuality, that says you can't
10 have the threaded barrel. That's one of the
11 factors. You could have that as one factor
12 without having another one of the factors. It's a
13 tally system, if you will.

14 Q. (Inaudible).

15 THE COURT REPORTER: I'm sorry, we
16 didn't hear that.

17 BY MR. VANNELLA:

18 Q. If you can go to page 23 of your
19 report.

20 A. 23, yes.

21 Q. Okay. So towards the bottom, right
22 after you see an enumerated list, one through
23 four, first paragraph after that. I'm going to
24 read both sentences of that paragraph. I'm sorry,
25 both sentences of that paragraph.

1 Quote, the attachment of the pistol's
2 magazine, item one above, has nothing to do with
3 the pistol safety. Like other features discussed
4 above, this is a common firearm feature that is
5 only useful as a means of criminalizing certain
6 firearms the state wishes to ban, end quote.

7 What do you mean when you say, the
8 attachment points of the magazine and has nothing
9 to do with the pistol safety?

10 A. I mean, it doesn't make it an unsafe
11 firearm or a criminal firearm or a firearm that is
12 necessarily dangerous for someone to use. It
13 depends on many other factors.

14 A. What is the purpose of the attachment
15 point?

16 A. It's just that some -- it's just that
17 some firearms don't have the magazine go into the
18 grip of the firearm. They have it go into a
19 magazine well ahead of the grip of the firearm.
20 It's a different kind of design.

21 Q. But isn't the reason for that design
22 is it gives a better grip for the shooter because
23 they can get two hands on the grip?

24 A. Possibly, but you can get -- you can
25 hold a handgun with two hands anyway. That's the

1 way most people are taught to shoot a handgun, is
2 with two hands on it.

3 Q. But isn't that specifically the
4 reason for the -- for having a separate attachment
5 point of the magazine?

6 A. If you're asking me the reason,
7 you're asking me what was in the designer's head
8 when he designed it, and I cannot tell you that.

9 Q. Why do people get guns with
10 attachments, separate attachment points, to the
11 magazine?

12 A. It's one kind of a firearm. Some
13 people like it.

14 Q. What's the harm in regulating it?

15 A. The harm in regulating it, it's a
16 constitutional right guaranteed by the Bill of
17 Rights. And now you're saying, but the state can
18 prohibit whichever gun it's doesn't like the looks
19 of. This or the rifle with the bayonet mount,
20 even though the person doesn't even own a bayonet
21 and has never even seen a bayonet or the rifle
22 with a pistol grip like almost all AR-15s have,
23 gee, that makes this look nasty, doesn't it?
24 Let's prohibit it. It's letting the state
25 prohibit all kinds of things without a valid

1 basis. That's my personal opinion.

2 If you ask what's the harm? It's my
3 personal opinion. If you ask what's my
4 professional opinion? It's that it takes a
5 category of guns out of ownership in New Jersey
6 and makes New Jersey gun owners own only those
7 guns that the state wishes to let it own. And
8 that, to me, is not correct.

9 Q. So a feature that allows a person to
10 grip the gun with both of their hands has no
11 impact on the safety of that gun to that
12 individual?

13 MR. SCHMUTTER: Objection. No
14 foundation, and ambiguous.

15 A. If anything, you would say that
16 gripping a handgun with two hands allows you to
17 fire it more accurately. That's safer for the
18 user and the general public because the user can
19 hit what they're shooting at.

20 But again, I'm going to go back to
21 the fact that almost all handgun training today,
22 the vast majority of it, is to shoot handguns of
23 any sort with two hands on the gun.

24 Q. What about when we're talking about
25 semi-automatic rifles?

1 A. I don't know what that question
2 means.

3 MR. SCHMUTTER: Objection.
4 Ambiguous.

5 Q. In the second sentence of that
6 paragraph that I read to you, you stated that a
7 magazine that attaches -- the attachment point,
8 having a point that attaches to the pistol outside
9 of the grip is a, quote, common firearm feature,
10 correct?

11 A. Yes.

12 Q. How (Inaudible) is it?

13 THE COURT REPORTER: I didn't hear
14 what he said.

15 A. I don't know how to answer that. He
16 said, how common is it. And the answer is, I
17 don't know how to answer that question. I would
18 have to look at all the models of firearms that
19 had been made with magazines that have an
20 attachment point, other than in the grip, and then
21 try to get manufacturing production data on all of
22 them. I don't know the answer to that, either as
23 a percentage or as a raw number.

24 Q. Well -- but you're saying it's,
25 quote, common. What are you relying on when you

1 made that statement in your report?

2 A. That there are a number of firearms
3 that are made that way that are bought and sold
4 and used throughout the United States and many
5 other places.

6 Q. But you don't have any specific data
7 or other evidence that you're relying on?

8 A. Other than that I see them with some
9 regularity elsewhere other than in New Jersey.

10 Q. On page 24, the next page of your
11 June 15th report.

12 A. I'm on 24, yes.

13 Q. About halfway down, there's a
14 paragraph that begins with the heading, shotgun
15 magazine capacity?

16 A. Yes, sir.

17 Q. I'm going to read the second sentence
18 of that paragraph. Quote, many semi-automatic
19 shotguns intended for self-defense use have
20 magazine capacity of over five rounds, end quote.

21 What do you mean when you say many?

22 A. More than a few.

23 Q. A majority?

24 A. I couldn't tell you that without
25 trying to survey all of the semi-automatic

1 shotguns made that are for self-defense use,
2 intended for self-defense use. I have not done
3 that. I couldn't do that.

4 Q. So you don't know what percentage of
5 shotguns have a shell capacity of over six rounds?

6 A. As I sit here today, I certainly do
7 not.

8 Q. Okay.

9 (Kapelsohn 2 was marked for
10 identification.)

11 MR. VANNELLA: Thank you. I'm going
12 to turn now to Exhibit Kapelsohn 2, which I
13 believe has now been -- is that in front of you,
14 since we were not able to do that earlier in the
15 deposition, I'm going to ask you to (inaudible)
16 that and confirm whether it appears to be a true
17 and accurate copy of your July 17th, 2023 reply
18 (inaudible) that you gave to Mr. Schmutter used in
19 this litigation?

20 THE COURT REPORTER: Again, Mr.
21 Vannella, I know it's probably beyond your control,
22 but you are just fading in and out. I'm sort of
23 reading your lips to know what you're saying.

24 MR. SCHMUTTER: Also, Dan, if this
25 helps, I'm hearing the same thing. So it's

1 probably on your end. It's not Veritext. And
2 which is different than before the break. Before
3 the break, I heard you perfectly, even though
4 sometimes they couldn't hear you. So there may
5 have been -- something may have happened to your
6 audio during the break or your equipment.

7 MR. VANNELLA: I will try to speak
8 louder and clear and slow.

9 THE WITNESS: This appears to be my
10 July 17th, 2023 reply report, 16 pages in length,
11 with several exhibits, Exhibits 1 through 4
12 attached to it.

13 Q. And sitting here today, do you
14 confirm and standby all of the statements and
15 conclusions that you render in this report?

16 A. Yes, sir.

17 Q. Now on page one of this report, in
18 the paragraph labeled preparation, the second
19 sentence I will read. And I quote, in addition, I
20 have reviewed various research materials in my own
21 library, on the internet, and elsewhere, spoken
22 with several individuals with information on
23 Revolutionary War era arms and accoutrements,
24 A-C-C-O-U-T-R-E-M-E-N-T-S, visited the Washington
25 Crossing Historic Park and inspected several items

1 in the museum's collection there, end quote.

2 What specific research materials from
3 your own library did you review?

4 A. Well, I say in the next sentence,
5 beyond what you've read, the most significant of
6 the sources I researched are cited below. And I
7 do cite them in this report. So I cite a number
8 of book titles and article titles and so forth.

9 There are probably other books I
10 looked in that didn't have anything useful on this
11 subject altogether, and others that had material
12 that was duplicative or otherwise I didn't bother
13 citing to it.

14 So I could go back to my library and
15 try to figure out what all other things that
16 weren't worth citing I looked at, but I didn't
17 think that was a worthwhile expenditure of time or
18 anybody's time.

19 MR. VANNELLA: Counsel will request
20 any additional materials that are not referenced
21 in this report that Mr. Kapelsohn reviewed.

22 MR. SCHMUTTER: Please put it in
23 writing, and we'll have a look at the request.

24 (Request.)

25 BY MR. VANNELLA:

1 Q. Is it fair to say then,
2 Mr. Kapelsohn, in terms of research materials that
3 you are relying on, they are all cited to in this
4 report?

5 A. Yes, sir.

6 Q. Specifically, what specific materials
7 on the internet and elsewhere did you review?

8 A. The same -- the same would be true.
9 If it was something that was significant, I
10 believe it found its way into a citation in my
11 report. There are many things I looked at that
12 didn't have useful information in them, weren't on
13 the right subject, whatever else. I didn't bother
14 keeping a list of all of those.

15 MR. VANNELLA: Counsel will request
16 copies of any additional materials as well.

17 MR. SCHMUTTER: Please put it in
18 writing, and we'll have a look at the request.

19 (Request.)

20 BY MR. VANNELLA:

21 Q. When you say you have spoken with
22 several individuals on Revolutionary War era arms
23 and acccutrouments, what are the names of those
24 individuals?

25 A. I'm not sure I can remember the names

1 of all of them. I can tell you some places I
2 spoke to people.

3 MR. VANNELLA: Counsel requests the
4 name and address of any individuals that
5 Mr. Kapelsohn spoke with.

6 MR. SCHMUTTER: Again, put it in
7 writing, please, and we'll have a look at the
8 request.

9 (Request.)

10 BY MR. VANNELLA:

11 Q. And what items specifically did you
12 inspect at the Washington Crossing Historic Park's
13 Museum?

14 A. Primarily, as I've indicated in this
15 report, Revolutionary War cartridge boxes, and
16 some of them were reproductions, historically
17 accurate, they told me reproductions of cartridge
18 boxes, paper cartridges, musket balls and
19 buckshot, some muskets themselves, one or two
20 Brown Bess muskets and maybe one or two and
21 Charleville muskets, further down on the page.

22 Q. Further down on page one of this
23 report, the second full paragraph from the bottom,
24 I want to read the first sentence. And I quote,
25 for many years, I have owned and fired black

1 powder, muzzle-loading, flintlock firearms of the
2 same general type in use during the American
3 Revolution, and during the period immediately
4 following the Revolution when the Second Amendment
5 was written and adopted, end quote.

6 When you make that statement, do you
7 rely on that in rebuttal of any of the defense
8 experts mentioned in your report?

9 A. Just in terms of a general knowledge
10 of how a flintlock firearm is loaded and fired and
11 used. Not in specific -- not in specific
12 contradiction of anything they've said.

13 Q. So this is not in response to any
14 opinions offered by Dennis Baron?

15 A. Oh, I would say it is, because he has
16 the opinion that a modern AR-15, for instance
17 magazine, is, as he calls it the modern analog of
18 the Revolutionary War soldiers' cartridge box,
19 which it absolutely is not. And that comes from
20 my knowledge of how magazines are used and how
21 they are a mechanical part of the firearm and how
22 cartridge boxes are not and that depends to some
23 extent on how flintlock muskets and rifles were
24 loaded and fired and used, and how the cartridges
25 for them were made up. So it's a general

1 knowledge of that. But, yes, to some extent it
2 helps me contest, again, Mr. Baron's opinion.

3 Q. What about Stephen Hargarten?

4 MR. SCHMUTTER: Objection.

5 Ambiguous, no foundation.

6 BY MR. VANNELLA:

7 Q. Are you relying on this knowledge in
8 rebuttal of any opinions offered by Stephen
9 Hargarten?

10 A. Well, my opinions, contrary to
11 Hargarten, have to do with the ballistic
12 efficiency, the wounding efficiency of
13 Revolutionary War muskets compared to modern
14 firearms. And I think what I explained in my
15 report is very specific and very clear and
16 understandable. It doesn't have to do with my own
17 use of flintlock firearms. I didn't do ballistic
18 gelatin testing of flintlock firearms. I make
19 reference to and attach ballistic testing done by
20 others, ballistic gelatin testing done by others
21 of flintlock firearms, however.

22 Q. I'm trying to understand, because you
23 offer rebuttal opinions against several defense
24 experts. I'm trying to understand what this
25 particular knowledge and experience you have,

1 which experts specifically are you relying on that
2 information against?

3 A. I think I've explained it.

4 Q. Well, you said kind of everyone.

5 A. I don't know what you mean.

6 Q. I'll go through the list. Are you
7 relying on this in response to -- in support of
8 your rebuttal of defense expert Jim Yurgealitis?

9 A. What do you mean by this?

10 Q. Your knowledge of how to fire a
11 musket from the Revolutionary War era?

12 A. No, that has to do with Dennis
13 Baron's position.

14 Q. Just Dennis Baron?

15 A. No --

16 MR. SCHMUTTER: Objection.
17 Misrepresents the record.

18 A. Give me a second, please. Yeah, Saul
19 Cornell also makes an accoutrements argument,
20 along with Dennis Baron. So it -- my
21 understanding of how cartridge boxes were used and
22 how flintlock muskets and rifles were loaded and
23 fired and used, is of general background
24 information. But -- but basically my specific
25 arguments contrary to both Dennis Baron and Saul

1 Cornell on this subject are set out in about two
2 and a half pages of report. They're very
3 specific. It doesn't refer to me firing flintlock
4 firearms. It does refer to how they are used by a
5 Revolutionary War soldier, however.

6 Q. On page one, still of your rebuttal
7 report, in fact, the next sentence of the
8 paragraph that I had quoted the first sentence,
9 I'll quote that sentence, I also have friends and
10 acquaintances who are, quote, reenactors, end
11 quote, of Revolutionary War and Civil War battles,
12 end quote.

13 Are you relying on your having
14 friends and acquaintances who are Revolutionary
15 and Civil War reenactors in support of any of your
16 rebuttal opinions in this report?

17 A. It helped me to go first look at
18 cartridge boxes. They were Civil War cartridge
19 boxes. They turned out to be very, very similar
20 to Revolutionary War cartridge boxes. And the
21 Brown Bess musket that was used in the
22 Revolutionary War was also used in the Civil War.
23 It was a British-made musket that spanned over 10
24 years, I think, in its service. And was used in
25 both sides in the Revolutionary War, and both

1 sides in the Civil War.

2 Q. Are you relying on this for the same
3 reasons that you're relying on your knowledge of
4 how to fire a musket in this report?

5 A. It gave me general background
6 information to start with. If it was of more
7 specific importance than that, I would have cited
8 it, specifically in my several pages of discussing
9 cartridge boxes and Dennis Baron's and Saul
10 Cornell's arguments about boxes being same as
11 magazines. Supposedly magazines are not covered
12 under the Second Amendment. It's not of more
13 specific importance than as of general background.

14 MR. VANNELLA: Counsel, I will
15 request a list of the names and addresses of these
16 individuals, as well.

17 MR. SCHMUTTER: Please put it in
18 writing, and we'll consider the request.

19 (Request.)

20 BY MR. VANNELLA:

21 Q. The next sentence, which is the first
22 sentence of the next paragraph on page 1, quote, I
23 have done many types of ballistic testing for the
24 past 45 years, end quote.

25 To the extent this has not already

1 been covered in the deposition, I just want to
2 clarify, have you recorded the results of any
3 ballistic testing?

4 A. Oh, over the years, I'm sure I have.
5 Not -- not specific to musket balls, however.

6 Q. Okay. And do you have those results
7 still?

8 A. Some I have. Some I don't. Some I
9 would have to spend days looking for. They have
10 nothing to do with this case. But if someone
11 wants to ask for them, I guess we'll have to say
12 that that is unreasonable and burdensome and
13 oppressive, but ask away.

14 MR. VANNELLA: Yeah, Mr. Kapelsohn, I
15 think Mr. Schmutter can make any objections that
16 are proper. And I remind you, you are not giving
17 (inaudible) in this matter. We're requesting that
18 counsel, if it's mentioned in the report, I have
19 no idea why it would be not something that is
20 subject to discovery.

21 A. 45 years worth of ballistic testing
22 you think is appropriate to ask for? Go right
23 ahead.

24 MR. VANNELLA: I'm (inaudible)
25 relying on this to bolster your credentials as an

1 expert, yes.

2 MR. SCHMUTTER: Please put the
3 request in writing, and we'll have a look at it.

4 THE COURT REPORTER: You are still
5 breaking up, Mr. Vannella.

6 (Request.)

7 BY MR. VANNELLA:

8 Q. On page 2 of this report, you
9 indicate that you have been a witness in hunting
10 accident cases in several states and in Canada.
11 Is that correct?

12 A. Yes, sir.

13 Q. Do you know, what are the cases that
14 you were an expert witness in hunting accidents?

15 A. I can remember some of the cases. I
16 cannot remember them by name or by court.

17 MR. VANNELLA: We'll request a list
18 of those cases, as well, Counsel.

19 MR. SCHMUTTER: Please put it in
20 writing, and we'll have a look at the request.

21 (Request.)

22 BY MR. VANNELLA:

23 Q. Still on page 2, in the first full
24 paragraph, last sentence, quote, I am generally
25 familiar with hunting laws and methods and the

1 types of firearms and ammunition used for hunting
2 in many parts of the United States, end quote.

3 Which parts of the United States, specifically?

4 A. Many parts of the United States. The
5 states I've lived in, other states that I visited
6 and hunted in, states about which I've read
7 articles in magazines about hunting, books about
8 hunting, seen videos about hunting, talked to
9 friends who hunt in those states who live in those
10 states. So I, you know, would have to sit down
11 and tell you what all states, but I cannot come up
12 with a list right now as I sit here, but it's many
13 states and many parts of the country.

14 MR. VANNELLA: We'll request a list
15 of those states, Counsel.

16 (Request.)

17 Q. But let me ask you, Mr. Kapelsohn,
18 have you actually reviewed the laws of any of
19 those states that you're referring to?

20 A. I reviewed the laws of all the states
21 I listed here at the time I hunted in those
22 states. I reviewed the laws that were applicable
23 to the kind of hunting I was doing. I mention New
24 Hampshire, Connecticut, New York, New Jersey,
25 Pennsylvania, Ohio, Indiana, Louisiana and

1 Alabama.

2 And in some cases, I've reviewed the
3 laws of other states with regard to hunting in
4 those states, where I have worked in hunting
5 accident cases in those states.

6 MR. SCHMUTTER: Please put the
7 request in writing, Counsel, and we'll have a look
8 at the request.

9 BY MR. VANNELLA:

10 Q. I want to turn for a moment to page
11 14 of this report.

12 A. Yes, sir. I'm there.

13 Q. I want to read --

14 MR. SCHMUTTER: I'm sorry, what page
15 are we on, Dan? I apologize.

16 MR. VANNELLA: 14.

17 MR. SCHMUTTER: Okay.

18 BY MR. VANNELLA:

19 Q. Is it correct that in the third
20 bullet point and paragraph from the top, you are
21 discussing Mr. Yurgealitis's report?

22 A. Yes. Third bullet point, did you
23 say?

24 Q. Yes, third bullet point.

25 A. Yes.

1 Q. Do you see about halfway down,
2 sentence that begins with, most defensive
3 confrontations?

4 A. Halfway down in what?

5 Q. In this third bullet pointed
6 paragraph on page 14.

7 A. I'm sorry. I was looking at the
8 third bullet point at the bottom. I'm sorry.
9 Yes, I see the sentence that starts, in most
10 defensive confrontations.

11 Q. Can you read that sentence and the
12 sentence that follows it?

13 A. Yes. In most defensive
14 confrontations, what the defender must do with his
15 or her firearm is not fire it. And, not fire it,
16 is underlined. In other words, most defensive
17 confrontations are resolved without shots being
18 fired.

19 Q. Thank you. And do you still stand by
20 that statement today?

21 A. Yes.

22 Q. Would you also agree then in a
23 situation where no shots are fired, the accuracy
24 of the firearm doesn't matter?

25 A. Well, the accuracy of the firearm

1 still matters, because you don't want a person to
2 have -- and the person doesn't want to have a
3 firearm they cannot fire accurately in case they
4 have to fire it and in order to practice and train
5 with it. But if we're talking about in that very
6 confrontation where no shots are fired was
7 accuracy an issue, I guess not.

8 Q. I want to turn back to page 10 of
9 your report.

10 A. Yes, sir. I'm there.

11 Q. In the last full paragraph -- the
12 last full paragraph of this page, do you see where
13 you state that, law enforcement agencies
14 nationwide use AR rifles for building and trees,
15 for serving arrest warrants and other self-defense
16 situations at short range and close quarters?

17 A. Yes, sir.

18 Q. Are AR-15s the primary-issued service
19 arm for police officers?

20 A. No. In this country, the
21 primary-issued service firearm is their handgun,
22 their service pistol.

23 Q. Do law enforcement officers in this
24 country use AR-15s during their regular beat?

25 A. I don't know what you mean by use.

1 They certainly don't shoot people during their
2 regular tour of duty. They carry them in their
3 car. And they often take them out on -- for
4 various activities. Certain kinds of vehicle
5 stops, responses to certain crimes in progress,
6 building searches, serving search warrants and
7 arrest warrants, et cetera, searches for people in
8 wooded areas and in urban areas and in buildings.

9 Q. Well, there always are exceptions,
10 when you say certain situations. In a routine
11 motor vehicle stop, does a police officer leave
12 their vehicle and approach the other vehicle with
13 an AR-15 in hand?

14 A. If it's a traffic infraction, they
15 don't leave their vehicle and approach the
16 driver's vehicle with any firearm in hand, handgun
17 or AR-15.

18 Q. What percentage of situations would a
19 police officer use an AR-15 and have that in their
20 possession as opposed to a handgun or no weapon at
21 all?

22 A. You need to give me a little more
23 detail.

24 Q. Well, you say that there are certain
25 circumstances when police officers would be either

1 carrying or holding or using an AR-15. Was that
2 your testimony?

3 A. Yes.

4 Q. What percentage of interactions with
5 the public are those type of events where they're
6 carrying or using or holding an AR-15?

7 A. I can't give you a percentage.

8 Q. I'm going to turn now to page 3 of
9 your report.

10 A. 3?

11 Q. 3.

12 A. I'm on page 3.

13 Q. So the first full paragraph, I will
14 read it for you.

15 Quote, the bottom line of this
16 discussion is that cyclic or cyclic rates of fire
17 given by defendants' experts are of only
18 technical, theoretical interest. In actual use,
19 the firearms cannot be fired that quickly. And if
20 they were fired fully automatically at all, the
21 result would typically be very inaccurate fire and
22 a quick cessation of the engagement when the
23 shooter exhausts his ammunition supply, end quote.

24 What do you believe is the fastest
25 rate of fire for a firearm accessible to private

1 civilians?

2 A. I think that's a very broad-based
3 question. Here in Pennsylvania, private
4 civilians, as you call them, are allowed to own
5 fully automatic weapons. And to my knowledge,
6 there's not been any legal problem with that. And
7 some of those fully automatic weapons fire at
8 cyclic rates of 1,000 or 1200 rounds per minute.
9 Not that you can actually fire them that fast in
10 practical effect. So, your question needs a lot
11 more detail before I can answer it.

12 Q. Well, you say again in the second
13 sentence of that paragraph that, quote, the result
14 would typically be very inaccurate fire. What are
15 you relying on when you make that statement?

16 A. Experience with fully automatic
17 weapons and with watching other people use them,
18 teaching other people to use them, reading
19 articles and books about their use, et cetera.

20 Q. When you use the term cessation of
21 engagement, and whether it would happen more
22 quickly or less quickly, or sooner rather than
23 later, would you agree that it would happen sooner
24 if the ammunition supply was more limited?

25 A. Yes --

1 Q. On --

2 A. -- if all other factors remained the
3 same.

4 Q. I want to turn now to page 7 of your
5 . . .

6 A. All right. I'm on 7.

7 Q. In your -- in the last full paragraph
8 on this page, the second from the bottom, you are
9 critiquing Dr. Hargarten's report. And
10 specifically, you assert that .25 caliber -- or
11 .25 caliber, .32 caliber and .40 caliber pistols
12 are, quote, inadequate for self-defense use, end
13 quote, is that correct?

14 A. No. No, I did not say that.

15 Q. Okay. What are you saying then when
16 you're referring to the -- his chart?

17 A. Well, I say a lot of things about his
18 chart, including the fact that it's wrong and it's
19 presenting false information to the court.

20 But what aspect of his chart do you
21 want me to comment on?

22 Q. The part where he says .25 caliber
23 and .32 caliber and .40 caliber are, as you say,
24 most firearms experts consider to be inadequate
25 for self-defense use?

1 A. I did not say that at all. Let's
2 read it correctly.

3 I say, and this starts with the
4 second sentence of that paragraph, as to the first
5 two of these, meaning the .25 caliber and the .32
6 caliber, as to the first two of these, I note
7 that, assuming he is referring to the .25 or also
8 called .25 ACP, the ACP standing for Automatic
9 Colt Pistol, and .32 auto or .32 ACP, these are
10 two underpowered, obsolescent pistol calibers,
11 which most firearms experts consider to be
12 inadequate for self-defense use. That's what I
13 said about the .25 auto and the .32 auto.

14 Q. When you say most firearms experts,
15 who are you referring to?

16 A. It's a general comment based on years
17 of reading and associating with firearms experts
18 and writing for firearms magazines, attending
19 courses taught by firearms experts and teaching
20 them myself. Many people consider me a firearms
21 expert, et cetera.

22 Q. Can you identify any other
23 individuals besides yourself?

24 A. Oh, I could probably identify many
25 who I expect, if you contacted them, would say the

1 .25 auto and .32 auto are underpowered for
2 self-defense. It's commonly written.

3 MR. VANNELLA: Counsel -- we'll
4 request a list of those individuals, Counsel.

5 THE WITNESS: It's hundreds.

6 MR. SCHMUTTER: Please put it in
7 writing, and we'll take a look at it.

8 (Request.)

9 BY MR. VANNELLA:

10 Q. Well, in your expert opinion, what is
11 the recommended firearm for civilian self-defense?

12 A. There is no --

13 MR. SCHMUTTER: Objection. No
14 foundation.

15 Q. What is the adequate firearm for
16 self-defense?

17 MR. SCHMUTTER: Same objection.
18 Foundation.

19 A. There is no one recommended firearm
20 for civilian self-defense. There are many such
21 firearms.

22 Q. Just not the ones that Dr. Hargarten
23 references in his report, those two?

24 A. Those two are certainly not
25 recommended as adequate for self-defense.

1 Q. Do you know what degrees
2 Dr. Hargarten has?

3 A. No. I think I've read them. I think
4 I probably have seen his CV attached to his
5 report.

6 Q. I'll represent he's a medical doctor
7 and also has a master's degree in public health.
8 Do you have any reason to dispute that?

9 A. I don't dispute that. If he is, then
10 he should know better about what calibers are
11 adequate for self-defense.

12 Q. What qualifies you to rebut the
13 report of a medical doctor?

14 A. Years of work in the firearms fields,
15 including in defensive shootings, including
16 reviewing data on shootings with various calibers
17 of guns, ballistic testing of others and of me, et
18 cetera.

19 Q. And is all that -- is that all that
20 you read Dr. Hargarten's report to be giving
21 opinions on?

22 A. No, not at all. I showed why his
23 report and his chart about the musket ball, as he
24 calls it, is inaccurate and should not be
25 presented to the court as accurate data because it

1 is not.

2 Q. So if Dr. Hargarten said that
3 firearms and the bullets they carry cause damage
4 to a body by transferring kinetic energy to the
5 target which ripples through tissues and organs,
6 you don't have any training or expertise to rebut
7 that, do you?

8 A. Well, I have a lot of training about
9 it. But that's one of the ways that bullets do
10 damage to human bodies. Some would contest that
11 ripples create damage when the bullets are at
12 handgun velocity, rather than rifle velocity. But
13 that's not what I'm contesting in his report, in
14 any event.

15 I make it very clear what I'm
16 contesting. He has a chart with ballistic data in
17 it which the musket ball line, which he's
18 maintaining he's comparing the .223 to, is a
19 glaring gross error. It's a ballistic error.
20 It's a mathematical error. It should not be
21 accepted by the court as accurate data. It is
22 not.

23 Q. Is it fair that -- would you agree
24 that you cannot testify to the scientific or
25 medical process of how firearms and bullets they

1 carry cause damage to the human body?

2 MR. SCHMUTTER: Objection.

3 Ambiguous.

4 A. Well, I've studied it in many, many
5 classes, including classes taught by M.D.s,
6 including ones much more illustrious than
7 Dr. Hargarten. Whether a court thinks that that
8 qualifies me to testify about it or not is for a
9 court to decide. I certainly teach it to groups
10 of firearms instructors, police officers, and
11 others. But whether or not I'm qualified to
12 testify about it, again, is a court's decision,
13 not mine.

14 Q. Turning to page eight of this report.
15 When you're addressing Dr. Hargarten's results, is
16 it correct that you take issue with the mass of
17 lead musket balls that were used in his study?

18 A. Yes.

19 Q. What difference does the mass of the
20 bullet make?

21 A. He uses his chart to support his
22 argument that the .223 or 5.56 millimeter round is
23 so horrifically more devastating to the human body
24 than anything that existed at the time of the
25 Revolutionary War in the terms of an individual

1 soldier's weaponry. That had our Founding Fathers
2 only realized how horrific the .223 was, they
3 would never have given people -- the people the
4 right to keep and bear arms.

5 And to support that, he has a chart
6 where he has a line called musket ball and he puts
7 its mass at one-ninth of the accurate number. And
8 the result is, he has an energy transfer, which is
9 one small fraction of what it actually would be if
10 he used accurate numbers. So it's an inaccurate
11 chart supporting his argument.

12 Q. We're talking about calculating
13 inconsistent kinetic energy of these bullets.

14 A. Among other things, calculating
15 kinetic energy, and then he has columns that
16 calculate the transfer of kinetic energy to the
17 ballistic gelatin blocks he uses. And then he
18 fails to take into account the difference in
19 lethality of a musket ball wound at the time of
20 the Revolutionary War to a wound on the
21 battlefield today, which is a factor of one to
22 four basically.

23 Q. When one calculates kinetic energy,
24 what matters more in the calculation, the mass or
25 the velocity?

1 A. The velocity.

2 MR. SCHMUTTER: Objection.

3 Ambiguous.

4 Q. Say that again.

5 A. The velocity. But in this case, the
6 mass is nine times greater, and the caliber is .69
7 caliber versus .223. It's a huge differentiation.
8 The result is a hugely different crush cavity,
9 permanent wound cavity, if you will, in either the
10 ballistic gelatin or a human body from a musket
11 ball. And it throws off his calculations that
12 support his argument.

13 Q. In your report though, you state that
14 the exact velocity of the musket ball exiting the
15 muzzle of a Brown Bess musket as a matter of
16 dispute, and can't be exactly calculated as of
17 today. Is that correct?

18 A. Yes, but I give approximations of it.

19 Q. Do you know the velocity of a bullet
20 from an assault weapon, such as, and I'll give you
21 an example, an AR-15 rifle?

22 MR. SCHMUTTER: Objection. Lack of
23 foundation. Ambiguous.

24 A. You would have to give me the weight
25 of the bullet, the length of the barrel, et

1 cetera. In general, it's about 2800 to 3200 feet
2 per second. But there are faster rounds out of
3 the AR-15 and slower rounds.

4 Q. Would you agree that semi-automatic
5 firearms fire with much greater velocity than a
6 musket would?

7 MR. SCHMUTTER: Objection. Lack of
8 foundation. Ambiguous.

9 A. Depends on what semi-automatic
10 firearm you're talking about. Some of them are
11 slower than a musket, some are faster than a
12 musket.

13 Q. Which are slower than a musket?

14 A. A whole lot of semi-automatic pistols
15 are slower than a musket.

16 Q. Such as?

17 A. .25 auto, .32 auto, with many kinds
18 of ammunition, 40 S&W. It depends on what musket.
19 There are some muskets that achieve velocities of
20 1800 feet a second. It depends on the specifics
21 of what we're talking about.

22 Q. Are you aware of any sources from the
23 time of the Revolutionary War era that measured
24 and calculated the velocity of muskets -- muskets
25 balls that are fired?

1 A. Off the top of my head, the -- the
2 oldest sources I can think of are the mid 1800s.
3 So that's about 75 years later. There may be some
4 from the time of the Revolutionary War. I would
5 have to look back through materials to see if I
6 can find that.

7 Q. Is it also fair to say that the exact
8 velocity of the musket fired depends on how much
9 gun powder is put into the musket?

10 A. It does.

11 Q. And musket shots are loaded one at a
12 time, by hand, correct?

13 A. Yes.

14 Q. So the amount of gun powder would
15 vary for each person for each shot, correct?

16 A. To an extent. But keep in mind the
17 paper cartridges issued to both armies at the time
18 of the Revolutionary War had a premeasured amount
19 of gun powder in them. There was some small
20 variation because there was variation of how much
21 the soldier poured into the priming pan. But it's
22 not as if it was completely across the board.
23 There was a standard amount of powder that was
24 used.

25 Q. Have you studied any historical

1 records on gunpowder use in muskets?

2 A. Some, yes.

3 Q. What are those?

4 A. I can't name them as I sit here.

5 Some of them I cite in the report I wrote.

6 MR. VANNELLA: Counsel will request
7 any other records Mr. Kapelsohn relied on that are
8 not cited to in his report.

9 MR. SCHMUTTER: Please put it in
10 writing and we'll have a look at the request.

11 (Request.)

12 Q. Would the velocity of the musket ball
13 depend on the purity of the gunpowder itself or
14 the type of gunpowder used?

15 A. It would.

16 (Exhibit Kapelsohn 3 was marked.)

17 Q. At this point, I want to turn your
18 attention to what has been marked as Kapelsohn 3
19 for this deposition. I will represent this was
20 provided to me by Mr. Schmutter (inaudible)
21 attached --

22 MR. SCHMUTTER: I can't hear you,
23 Dan.

24 Q. I'll represent that Mr. Schmutter
25 provided this to me along with all of the exhibits

1 that are attached hereto. And Mr. Kapelsohn, if
2 you can confirm this is a true and accurate copy
3 of what you call supplementary letter on the first
4 page --

5 THE COURT REPORTER: We can't hear
6 you. I'm sorry.

7 BY MR. VANNELLA:

8 Q. Can you confirm this is a true and
9 accurate copy of what you title a supplementary
10 letter dated March -- dated July 31st, 2023?

11 A. It appears to be. I have not looked
12 through all of the exhibits. But the letter seems
13 to be the letter.

14 Q. And you provided this to
15 Mr. Schmutter with the expectation that it would
16 be produced as your supplemental report in this --
17 in these matters?

18 A. Yes.

19 Q. I want to turn to exhibit (inaudible)
20 of this report.

21 A. Exhibit what?

22 Q. Exhibit 1 of this report.

23 A. Yes, sir.

24 Q. And what is this exhibit?

25 A. It's an article called, A Detailed

1 Study of the Effectiveness and Capabilities of the
2 18th Century Musketry on the Battlefield.

3 Q. Okay. I would ask you to turn to
4 page 4 of Exhibit 1, and to the heading, muzzle
5 velocity.

6 Q. Yes, sir.

7 Q. The second sentence of that states,
8 quote, unfortunately, there are no records of the
9 muzzle velocities of the Brown Bess from the
10 mid-18th Century and not many experiments appear
11 to have been conducted in that era, end quote.

12 Do you have any reason to disagree
13 with that statement?

14 A. No, I don't.

15 Q. I want to now turn to page 6 of this
16 exhibit.

17 A. Yes, sir.

18 Q. Under the heading that reads,
19 historical sources, quote, some sources would
20 suggest that the Brown Bess did not perform well
21 ballistically, proposing that shot penetration of
22 the body was rare and could be prevented by wet
23 clothing or shields, end quote.

24 Do you disagree with that statement?

25 A. That some sources suggest it, no, I

1 don't. However, there's -- there's actual
2 experimental data that shows that not to be the
3 case.

4 Q. The next paragraph -- well --

5 A. I mean, if you read just the next
6 line, it says, contradicting this, there was also
7 circumstantial evidence that a single shot could
8 penetrate two men standing one behind the other,
9 et cetera, so, you know, there are things here
10 from both sides of the argument, if you will.

11 Q. Okay. Further down on this page,
12 after the indented section, first paragraph and
13 sentence that follows, I want to read, quote,
14 there has also been a modern fascination with the
15 supposed high recoil resulting from firing a Brown
16 Bess. It is believed by some that government
17 soldiers lessened the painful effect of this by
18 reducing the amount of powder rammed down the
19 barrel. This would reduce the muzzle velocity of
20 the shot, and so affect the range, accuracy and
21 penetration of the shot, end quote.

22 Do you doubt the accuracy of that
23 statement?

24 A. You say the accuracy of the
25 statement. It said, it is believed by some. So

1 do I doubt that it's believed by some? No. You
2 know, in the first quote you read me, you didn't
3 read the next part that said that actual testing
4 in the mid 1800s showed the velocity to be 1500
5 feet per second.

6 I used a thousand feet per second as
7 my point of argument. So you know, you are
8 picking and choosing certain lines but --

9 Q. It's been a long day. You answer the
10 questions I ask you. If any other attorney wants
11 to ask you a question, they can do so when I'm
12 finished, okay?

13 A. No, I'll answer as I see fit. And if
14 you're -- if you're picking certain portions of
15 something that I put in a report, I believe I'm
16 allowed to refer to other portions of what's in my
17 report.

18 Q. No. You're to answer the question
19 that I asked. If any other attorney wants to ask
20 you --

21 A. Well, I'll do as I see fit. And you
22 can do what you wish, sir.

23 MR. SCHMUTTER: Dan, the witness is
24 allowed to answer the question in the way he
25 thinks is appropriate. He answer -- you ask the

1 questions. He answers them. You can't tell him
2 how to answer questions.

3 MR. VANNELLA: I asked him if he
4 agreed or disagreed with a statement I read. And
5 then he goes on to a different part of this
6 article. That was not responsive to my question,
7 Dan.

8 MR. SCHMUTTER: Then that's an
9 argument you'll make at the appropriate time. You
10 cannot control how a witness answers a question.

11 MR. VANNELLA: If a witness refuses
12 to answer my question and wants to answer the
13 question he were asked, I can control that.

14 MR. SCHMUTTER: He didn't refuse to
15 answer your question. He answered your question.

16 MR. VANNELLA: And then he went on to
17 answer another question that was not asked.

18 MR. SCHMUTTER: What are you -- I'm
19 not sure what you're saying. He answered -- you
20 asked a question. He gave you an answer. You may
21 not like the answer, but that's the answer he
22 gave. He's allowed to give answers to questions
23 that he thinks are the answers that are
24 appropriate.

25 MR. VANNELLA: Fine. He can give

1 nonresponsive answers and the record will reflect
2 that.

3 MR. SCHMUTTER: You can characterize
4 them however you like. You can make an argument,
5 if you feel like it. But you can't tell him how
6 to answer a question.

7 MR. VANNELLA: I can instruct him to
8 answer my question and not any others. I can
9 absolutely do that.

10 MR. SCHMUTTER: No, you can't. You
11 -- you're allowed to ask questions. The witness
12 is required to answer questions. That's all.

13 BY MR. VANNELLA:

14 Q. Mr. Kapelsohn, do you know what sort
15 of technology Dr. Hargarten used to run his tests?

16 A. I couldn't understand all the words
17 you said. Could you repeat that, please?

18 Q. Do you know what sort of technology
19 Dr. Hargarten used to run his tests?

20 A. I read his article. So to the extent
21 that it's in there, I understand it.

22 Q. Do you know what device he used?

23 A. To the extent it's in his article, I
24 read it and I understood it.

25 Q. Well, then what is the device he

1 used?

2 A. I'd have to look back at his article
3 to tell you that. Would you like me to do that?

4 Q. No.

5 A. Okay.

6 Q. Do you know who has access to the
7 device?

8 A. Who has access to the device?

9 Q. Yes.

10 A. I couldn't tell you that without
11 looking back at his article.

12 Q. Do you know how much it costs to run
13 the tests that he ran?

14 A. I could not tell you that, either.

15 Q. On page 8 of the rebuttal report, if
16 you can go back, is --

17 A. Well, my supplemental letter is only
18 three pages. So I don't know -- oh, you want the
19 other report?

20 Q. I'm sorry. I should have been
21 clearer. Kapelsohn 2, your July 17th report.

22 A. Oh, hold on a second. Reply report,
23 Kapelsohn 2, page 8 of it?

24 Q. Yes.

25 A. All right. I'm on page 8.

1 Q. To quote the entire last sentence of
2 the last full paragraph on this page, quote, given
3 that the entire purpose of this chart is to form
4 the foundation for Mr. Hargarten's argument that
5 the AR-15 is so horrifically more powerful in
6 joules, J-O-U-L-E-S, of energy transferred to the
7 target than a Revolutionary War musket ball, that
8 the Founding Fathers would never have allowed,
9 quote, the people, end quote, to keep and bear
10 AR-15s, Mr. Hargarten's argument has no scientific
11 legs on which to stand.

12 What qualifications are you relying
13 on to critique Dr. Hargarten's recorded findings?

14 A. My knowledge of ballistics,
15 sufficient to know that his chart is grossly
16 incorrect.

17 Q. Do you have any reason to think the
18 device he used to test the kinetic energy of these
19 bullets was inaccurate?

20 A. I don't know whether it was or not.

21 Q. Do you have access to the same device
22 or same model device that Dr. Hargarten used?

23 A. As I sit here right now, I don't
24 remember what kind of device it was, so I could
25 not answer that.

1 Q. But you didn't measure the kinetic
2 energy of any of these bullets that you fired with
3 a scientific device, did you?

4 A. What bullets that I fired? I didn't
5 say I fired any bullets. I don't know what your
6 question is asking.

7 Q. Did -- are you relying on anyone
8 else's scientific experiments with the exact
9 specifications you wanted in rendering your
10 conclusions on the velocity of different bullets?

11 MR. SCHMUTTER: Objection. No
12 foundation. Confusing and ambiguous.

13 A. I don't understand your question.
14 But the fact is, kinetic energy can be calculated
15 based on a knowledge of the mass of the projectile
16 and its velocity. So the mass of a .69 caliber
17 lead musket ball can be determined. I've weighed
18 it. So I got the weight of it. And its velocity
19 is something that is within a certain range. And
20 I used 1,000 feet per second as an example. There
21 are mid-1800s testings of it up to 1500 feet per
22 second. There are modern testings of it from
23 about 800 to 1200 feet per second. I've attached
24 some of those to my later report.

25 I don't need to use scientific

1 instruments to determine its kinetic energy. It's
2 a mathematical calculation based on its mass and
3 its velocity, both of which can be determined,
4 one, specifically, and the other, within a range.

5 Q. So your opinion is that no mechanical
6 device can render a more accurate calculation than
7 just doing the numbers as you say?

8 A. I don't know whether it can render a
9 more accurate one or not. I know that his chart
10 is grossly inaccurate, because he's got the mass
11 of a musket ball, by which we are -- I assume to
12 presume he means a Revolutionary War musket ball.
13 He's got the mass of that ball at one-ninth its
14 actual mass. So there's no way his chart can be
15 anywhere close to accurate, whatever equipment he
16 uses and whether he's an M.D. or not.

17 Q. By the way, did Dr. Hargarten say
18 anything in his report about the Founding Fathers?

19 A. I don't know whether he used that
20 term or not.

21 Q. He didn't say anything in his report
22 about the Second Amendment either, did he?

23 A. I think he makes the argument that I
24 said he makes. Whether he used those exact words
25 or not, I can't tell you.

1 Q. How many shots can someone shoot with
2 a musket per minute?

3 A. Three or four.

4 MR. SCHMUTTER: Objection. No
5 foundation.

6 Q. How many shots can be shot with an
7 assault weapon per minute?

8 A. Many more than that.

9 MR. SCHMUTTER: Objection. No
10 foundation, ambiguous.

11 Q. Turning to page 9 of your rebuttal
12 report, the last paragraph on the page, and
13 towards the end of paragraph, I'm going to read a
14 sentence, and I quote, defendants' experts claim
15 that some states banned the 5.56 millimeter/.223
16 round for big game hunting because it is, quote,
17 too destructive, end quote.

18 What do you mean when you say it's
19 too destructive?

20 A. I say they say it's too destructive.
21 I didn't say it's too destructive. That's why I
22 put it in quotes and said, defendants' experts
23 claim. I think you can gather what it means
24 because of Mr. Yurgealitis' statement at the
25 beginning of this paragraph, where he says,

1 because of the propensity of the 5.56
2 millimeter/.223 round to create significant damage
3 upon impacting living tissue, it is not generally
4 considered nor favored as a hunting cartridge.

5 And then he says, a little later,
6 causing considerable tissue damage. So I think
7 that's clear that that is what is meant by too
8 destructive. But it's too damaging to the game
9 animal that you are shooting with it.

10 Q. And you disagree with that?

11 A. I disagree that that is why some
12 states ban it as a big game hunting cartridge that
13 allow other rifle calibers. They typically ban it
14 because it's an inadequate caliber and considered
15 inhumane for that purpose.

16 And I go on to explain in the next
17 paragraph that the destructiveness of a cartridge
18 on a game animal is dependent on a lot of factors,
19 including the bullet type, like hollow point
20 versus soft point versus full metal jacket versus
21 polycarbonate tipped, the weight of the bullet,
22 the velocity of the bullet, many factors.

23 The -- the thrust of defendants'
24 experts is to try to make the .223 look like a
25 horrific cartridge which is prohibited from

1 hunting because it's too destructive. That's not
2 true as a general statement. States that
3 prohibited for big game hunting, typically
4 prohibited for big game hunting because it is
5 ineffective and inhumane, not because it's on the
6 other side of the scale, too destructive.

7 Q. Can game that are shot by those type
8 of rounds be eaten afterward?

9 A. Many people shoot deer and other game
10 animals with .223 and eat the animals afterwards.
11 There's states where it is permitted for big game
12 hunting, for deer hunting and other hunting.

13 Q. So my question was -- so your answer
14 is, yes, they can be eaten when they're shot with
15 those caliber bullets?

16 A. Yes.

17 Q. You mentioned destructiveness of
18 these cartridges depends on a number of factors.
19 And later on in that paragraph -- and this is now
20 the second paragraph or the first full paragraph
21 on page 10 -- you note, bullets ranging from 36
22 grain to 40 grain are, quote, also used by some
23 police tactical teams and others to reduce the
24 chance of overpenetration in indoor settings, is
25 that correct?

1 A. Yes, I said that, yes.

2 Q. Does this mean that higher grain
3 bullets would result in the overpenetration in
4 indoor settings?

5 A. Not necessarily. It depends on many
6 things including the construction of the bullet.

7 Q. Is it your opinion that civilians
8 using 5.56 millimeter/.223 cartridge range, do
9 these bullets ranging from 36 grains to 40 grains
10 in order to reduce the chance of overpenetration
11 in indoor settings?

12 A. I didn't hear the whole question.
13 I'm sorry. Some of the words are cutting out.
14 Can You say it again?

15 Q. Is it your opinion that civilians
16 using 5.56 millimeters/.223 cartridge ranges
17 should use bullets ranging from 36 grains to 40
18 grains to reduce the chance of overpenetration in
19 indoor settings?

20 A. It would be one way to reduce the
21 chance of overpenetration, yes. There are others.

22 Q. Can I ask you to read the second full
23 paragraph on this page onto the record, the one
24 that begins with, another misleading piece?

25 A. You want me to read it out loud or to

1 myself?

2 Q. Out loud. Thank you.

3 A. Another misleading piece of ballistic
4 information concerns the maximum range of the 5.56
5 millimeter/.223 round, paren, properly termed the
6 maximum extreme range, end quote, to differentiate
7 it from, quote, maximum effective range, end
8 quote, which is much less.

9 On page 40 of his report,
10 Mr. Yurgealitis states, quote, the maximum range
11 of these rifles is 2650 to 3,000 meters. They
12 were not designed, nor are they suitable, for home
13 defense in short range close quarter situations,
14 period, end quote. And to get a bullet to travel
15 3,000 meters, paren, 1.86 miles, closed paren, one
16 would have to point the rifle's barrel up in the
17 air at approximately a 40-degree angle.

18 A lowly .22 rimfire, paren, .22 long
19 rifle, like Boy Scouts and other children learn to
20 shoot at summer camp, end quote, can travel 1.25
21 miles or more. Even handgun bullets, such as the
22 9 millimeter or .45 auto, have maximum extreme
23 ranges of 1.1 to 1.4 miles. The maximum extreme
24 range of a cartridge is not a reasonable gauge of
25 whether or not it is, quote, suitable for home

1 defense in short range close quarter situations,
2 end quote, as Mr. Yurgealitis' puts it. That's
3 the end of that paragraph.

4 Q. Thank you. So based on your report,
5 do you maintain that various firearms can have a
6 maximum extreme range of over a mile?

7 A. Of over what?

8 Q. Over one mile.

9 A. Yes, all of the ones I mentioned here
10 have a maximum extreme range of over one mile.

11 Q. If the bullet is shot through
12 drywall, as compared to into the air, does that
13 change the maximum extreme range?

14 A. Of course.

15 Q. Does the force of a weapon impact how
16 much material, like drywall, would shorten the
17 maximum extreme range?

18 MR. SCHMUTTER: Objection, ambiguous,
19 confusing.

20 A. I'm confused. Can we try that one
21 again?

22 Q. Does the force of the bullet fired
23 impact how much material, like drywall, would
24 shorten the maximum range?

25 A. Yes, among many other factors, it

1 affects it. No -- no bullet will have its maximum
2 extreme range after going through drywall or any
3 other intervening barrier. The maximum extreme
4 range is achieved by firing the bullet up in the
5 air at, as I said, approximately a 40-degree
6 angle.

7 Q. But another factor is also the force
8 in which the bullet leaves the gun in the first
9 place, correct?

10 A. Yes --

11 MR. SCHMUTTER: Objection. Ambiguous
12 and no foundation.

13 Q. Yes was your answer?

14 A. One of -- when you say the force of
15 which it leaves, I'm thinking of --

16 Q. The force in which (inaudible) --

17 A. Its velocity. Its ballistic
18 coefficient, which is a factor based on its shape
19 and the distribution of its mass throughout its
20 shape. Velocity, ballistic coefficient, factors
21 such as that. You say force, and I think of
22 kinetic energy, and I'm not sure that that is what
23 we would look at to determine maximum extreme
24 range. But it could be said to be a factor.

25 Q. Turning to Lucy Allen's report, you

1 reviewed her report from beginning to end, I
2 assume?

3 A. I did.

4 Q. And you are offering opinions
5 critiquing her report and the table that she
6 includes on page 7 of her report, correct?

7 A. I don't have it in front of me. So I
8 can't tell you what table she includes on page 7.
9 But I critique her conclusions, her arguments.

10 Q. Do you recall any of the -- any of
11 the data on the distribution of shots fired? For
12 example, do you recall that it mentions and it --
13 in its analysis, it gives a percentage of how many
14 incidents in which no shots were fired in the the
15 incident?

16 A. I remember it gives that, and I don't
17 remember what the percentage is.

18 Q. If I were to represent that it was 20
19 percent of the incidents in her report where no
20 shots were fired, does that -- do you have any
21 reason to dispute that?

22 A. I don't have a reason to dispute it.
23 I don't remember if it's accurate or not. But I
24 don't have a reason to dispute it.

25 Q. And if I were to represent that

1 approximately 98 percent of the incidents had five
2 or fewer shots fired, do you have any reason to
3 dispute that?

4 A. No.

5 MR. SCHMUTTER: Objection. Are you
6 asking if he has reason to dispute what the report
7 says? Or that it's true?

8 MR. VANNELLA: What the report says.

9 MR. SCHMUTTER: Can't you just show
10 him the report?

11 A. Are you waiting for an answer from
12 me?

13 MR. SCHMUTTER: My bluetooth just
14 died. Can you give me a second?

15 MR. VANNELLA: Let's go off the
16 record for a few minutes. And we'll get back to
17 you on this one.

18 (Discussion held off the record.)

19 BY MR. VANNELLA:

20 Q. So we can go back on the record.

21 I'm going to show -- I'm showing you
22 what I will mark as Exhibit Kapelsohn 7 for
23 purposes of this deposition.

24 (Exhibit Kapelsohn 7 was marked for
25 identification.)

1 (Discussion held off the record.)

2 BY MR. VANNELLA:

3 Q. I'm showing you what is page 7 of
4 Lucy Allen's report. I would just ask
5 Mr. Kapelsohn, if you could take a look at that
6 page and let me know when you finish reading it?

7 MR. SCHMUTTER: I object to him
8 answering the question without the opportunity to
9 look through the whole report if he needs to do
10 so.

11 MR. VANNELLA: I haven't asked any
12 questions.

13 MR. SCHMUTTER: I think it would be
14 appropriate to allow him to read through whatever
15 reports are necessary to answer the questions
16 about a page.

17 MR. VANNELLA: All right. Well, I'll
18 ask a question, and we'll see what the answer is.

19 A. I think I read this page, though I
20 can't read the bottom of it, if we can move it up
21 that would be great. Okay. Hold on a second.

22 Okay. I looked at this page.

23 Q. Having read this page, does -- do you
24 recall reading this page when you previously
25 reviewed Dr. -- I'm sorry, Miss Allen's report?

1 A. I believe I did, yes.

2 Q. And I will read the chart that is
3 entitled breakdown of incidents and NRA armed
4 citizen database by number of shots fired January
5 2011 to May 2017.

6 Out of the number of incidents of
7 shots fired, there were 134 incidents, according
8 to this chart, or 18.2 percentage of total
9 percentage of incidents. Did I read that
10 correctly?

11 A. Yes.

12 Q. And there were 587 incidents where
13 one to five shots were fired, or 79.8 percent of
14 the total number of incidents addressed in this
15 chart. Did I read that correctly?

16 A. Yes.

17 Q. And there were 13 incidents where six
18 to ten shots were fired for 1.8 percent of total
19 incidents covered in this chart. Did I read that
20 correctly?

21 A. Yes.

22 Q. And finally, there were two incidents
23 where more than ten shots were fired, which comes
24 to a percentage of .3 percent of incidents covered
25 in this chart. Is that correct?

1 A. That's what it says, yes.

2 Q. Okay. So would you agree that, based
3 on this chart, it is extremely rare for an
4 individual to need more than ten rounds for
5 self-defense?

6 A. I would agree that this chart shows
7 it to be rare, yes.

8 Q. Did you present any incident in your
9 own reports where more than ten rounds were used
10 by (inaudible) --

11 A. I said to you previously that I don't
12 know, because some of those AR-15 shootings I
13 mentioned to you don't indicate how many shots
14 were fired. So I -- my best recollection is there
15 are some that don't indicate, so I don't know.

16 Q. Okay. Thank you.

17 A. I don't --

18 Q. And I will --

19 A. And I don't agree that this chart is
20 representative of the totality of self-defense
21 uses of firearms, however.

22 MR. VANNELLA: Thank you. I will
23 have this marked and labeled as an exhibit and
24 provide it to the court reporter as soon as
25 possible following this deposition.

1 Q. I want to turn back to your rebuttal
2 report, which again is Exhibit Kapelsohn 2.

3 A. Okay. I have 2 in front of me.

4 Q. And I would ask you, if you need to
5 refer back to the page before, page 13, because my
6 question is, would you agree that the bullet
7 points on the bottom of page 13 and top of page 14
8 are responding to Mr. Yurgealitis' opinions
9 specifically?

10 A. Yes.

11 Q. Thank you. At the top of page 14,
12 the first bullet point, you say, quote, safely
13 storing a loaded shotgun in the home, especially a
14 home which children or others who are not
15 authorized to use the shotgun, is more difficult
16 than safely storing a handgun in a quick access
17 lockbox. In contrast, safely storing a loaded
18 shotgun, usually requires a gun safe, end quote.

19 Is safely storing an AR-15 or similar
20 weapon more difficult than safely storing a
21 handgun in a quick-access lockbox?

22 A. Yes.

23 Q. Is safely storing a loaded shotgun
24 more difficult than safely storing an AR-15?

25 A. I would say no.

1 Q. Why not?

2 A. Well, in one sense -- no, I have to
3 modify that, what I've said. The fact is, both of
4 them are long guns, so they don't fit in a small,
5 quick access -- what's typically called a
6 quick-access lockbox like someone that --
7 something that someone can keep in their, you
8 know, night table drawer or dresser drawer in the
9 bedroom.

10 But the fact is, it's slow and
11 awkward and difficult under stress to load a
12 shotgun. Mr. Yurgealitis suggests that a shotgun
13 be kept loaded, except for the chamber, and that
14 the hammer be dropped on an empty chamber and that
15 the safety be disengaged.

16 I would never think of keeping a
17 shotgun like that unlocked in a home where there
18 are any other people that could get their hands on
19 it who shouldn't be handling it, children or
20 others.

21 In one sense, the AR-15 gives an
22 advantage in that it can be kept completely
23 unloaded with a magazine kept separately. The
24 magazine could be locked up in a quick-access box,
25 along with one's handgun, for instance, or some

1 place else. And an AR-15 can be loaded with a
2 magazine much faster than a shotgun, much faster
3 and more efficiently than a shotgun can be loaded
4 with loose rounds.

5 So in that sense, the AR-15 gives an
6 advantage. On the other hand, both of them,
7 ideally, would be in a full-size gun safe, you
8 know, something that can take a shoulder weapon,
9 unless they're locked with something like a cable
10 lock or a trigger-guard lock or what have you.
11 The gun safe is better.

12 Q. Mr. Kapelsohn, would you agree that
13 someone who wants to use a firearm for an unlawful
14 purpose could benefit from using a firearm like
15 the AR-15?

16 A. Of course.

17 Q. Just the same as --

18 MR. SCHMUTTER: Objection.

19 Q. Just the same as someone who would
20 use it in self-defense?

21 A. Well, I don't know what you mean by
22 just the same. But if the first part of the
23 question is, could a criminal use an AR-15 for an
24 unlawful purpose, of course they could.

25 Q. You mentioned advantages. And you

1 testified to advantages. In your reports, you
2 discussed advantages that an AR-15 provides lawful
3 gun owners for purposes of self-defense, correct?

4 A. Yes.

5 Q. And do all those benefits also work
6 to the advantage of someone who would use that
7 weapon for an unlawful purpose?

8 A. I'm not sure I thought of all of
9 those benefits. Some of them, like the last one I
10 mentioned of keeping the magazine locked up in a
11 lockbox, wouldn't help the criminal. But many of
12 the advantages of accuracy and reliability and
13 continuity of fire, and things like that, would --
14 would be advantageous to a criminal user, as they
15 would to a law-abiding user. That's true of any
16 gun we can think of.

17 Q. Do you know what I mean when I use
18 the term, active shooter?

19 A. I think I do.

20 Q. What do you think that means?

21 A. Well, there are differences in
22 definition between the FBI's definition, the
23 Secret Service's definition, and some other
24 definitions. But, in general, an active shooter
25 is someone who is actively engaged in killing or

1 attempting to kill people and usually in a place
2 where there are multiple people. Some definitions
3 say a public place. Some definitions say an
4 indoor venue. Some don't make it to be indoors.
5 It can sometimes be outdoors. Whatever.

6 Between FBI and Secret Service, one
7 of them I think requires at least three people
8 killed; and another requires at least four victims
9 not necessarily killed. So there are differences
10 in definition. But, someone -- a criminal
11 actively engaged in killing or attempting to kill
12 multiple people.

13 Q. And could that person benefit from
14 using a firearm with the assault weapon's features
15 that are regulated under New Jersey law to
16 perpetrate an active shooting?

17 A. Could they benefit from it? They can
18 benefit from using any firearm. And sometimes
19 they don't do it with firearms. They drive a
20 truck through a crowd. Or they set off a gasoline
21 bomb in a school or use a bomb in a truck or a car
22 bomb. So, yes -- or handguns or shotguns. Yes,
23 but they could certainly use an AR-15 for the
24 purpose.

25 Q. And the features that you critique,

1 features that New Jersey law defined as features
2 that could determine whether something is an
3 assault weapon or not, you testified that they
4 provide uses for the person who owns the gun,
5 correct?

6 A. Yes.

7 Q. And the same would be true if that
8 person were an active shooter using the gun in an
9 active shooting, isn't that correct?

10 A. Not necessarily. I don't think, for
11 instance, that the active shooter gains anything
12 from having a bayonet lug on their rifle.
13 Nowhere, I don't know of any active shooting,
14 where they used a bayonet on a rifle to kill
15 people. I don't think it matters to an active
16 shooter whether there's a pistol grip or a regular
17 stock on the rifle. There are a number of these
18 features that I don't think matter.

19 The school shooting in the United
20 States with the highest fatality of any school
21 shooting, which is Virginia Tech, was committed
22 with, I think it was two handguns, no assault
23 rifle at all. You know, people who are intent on
24 killing others, can find some means of doing it.

25 Q. Does a pistol grip aid a person that

1 wants to use that weapon in self-defense?

2 A. I think it can.

3 Q. But it could also help someone who
4 wants to use it in an active shooting situation,
5 correct?

6 A. Conceivably it can for the same
7 reasons.

8 Q. Would an active shooter benefit from
9 using a large capacity magazine as defined under
10 New Jersey law to perpetrate an active shooting?

11 A. Possibly but it depends greatly on
12 the circumstances. Many of these active
13 shootings, the person is walking through a school,
14 through classrooms from desk to desk shooting
15 students and teachers who are huddled under
16 the desk. And they have plenty of time between
17 one desk and the next to change magazines in a
18 pistol. That's what the Virginia Tech shooter
19 did. It wouldn't matter much whether they had
20 10-round magazines or 20- or 30-round magazines in
21 some of those circumstances. It depends on the
22 exact situation.

23 Q. As I understand your testimony, your
24 opinion is that an assault defense situation, it's
25 best to have as much ammunition as you're able to

1 have, is that correct?

2 A. That is correct.

3 Q. Would the same be true for someone
4 who is an active shooter?

5 A. That -- that's true, too, except the
6 active shooter doesn't follow your laws. So if we
7 think the law will keep the active shooter from
8 having a large capacity magazine or multiple
9 firearms when he or she goes into the school like
10 some active shooters have had, it's not going to
11 have an effect. It's going to have an effect on
12 law-abiding people, for the most part.

13 MR. VANNELLA: Thank you, Mr.
14 Kapelsohn. I don't have any further questions.

15 MR. SCHMUTTER: Brad?

16 MR. LEHMAN: I totally didn't hear
17 what you said. Nothing for me. I'll leave it to
18 you, and thank Mr. Kapelsohn for his time today.

19 THE WITNESS: Thank you, sir.

20 MR. SCHMUTTER: Just a couple
21 questions. I just have a couple questions.

22 * * *

23 EXAMINATION

24 BY MR. SCHMUTTER:

25 Q. Mr. Kapelsohn, you were shown as

1 Kapelsohn 7 the page from a report of Lucy Allen,
2 correct?

3 A. Correct.

4 Q. Just for clarification, the chart on
5 that page, do you believe it is accurate?

6 A. I don't know whether it's accurate or
7 not. I don't believe it's representative of all
8 self-defense shootings, because of the nature of
9 how the information is gathered. I can explain
10 that, if you wish. But I don't know whether it is
11 accurate in the sense of accurately summarizing
12 the numbers gathered by Lucy Allen or whoever
13 gathered them. May I explain?

14 Q. Sure. Go ahead.

15 A. It says it's a chart taken from the
16 Armed Citizen Column of the American Rifleman
17 Magazine. I've read that magazine for years. It
18 comes out monthly. It's a publication of the
19 National Rifle Association.

20 And one of the things that is always
21 in every issue, is a one-page item called the
22 Armed Citizen in which the American Rifleman
23 Magazine publishes synopses, or excerpts, of local
24 newspaper articles about self-defense use of
25 firearms by private individuals. Those articles

1 come from newspapers, primarily. The standard
2 saying about newspapers, by news reporters is, if
3 it bleeds, it leads. Meaning, the more
4 sensational the topic, the more likely it is to
5 get in the newspaper.

6 I said in my report, that in my
7 opinion, the majority of instances of firearms use
8 in self-defense by private individuals, are uses
9 in which no shot is ever fired.

10 I still maintain the accuracy of
11 that. The fact is, when someone is trying to open
12 someone's door or succeeds in doing it or
13 approaches someone in a dark parking lot, and the
14 person draws a gun or pulls their coat back and
15 displays a gun, and the person runs away, that
16 almost never gets into the newspaper.

17 I say that having read articles on
18 this subject for about the last 65 years or so, 60
19 years. You don't see articles that say, a
20 threatening man approached Mr. Wilson in the
21 parking lot and Mr. Wilson pulled back his coat
22 and displayed his legally-carried firearm. And
23 the man ran away. That doesn't make much of a
24 news article.

25 We get news articles as a result of

1 situations where people do fire shots, most of the
2 time. And thus, we have what's in The Armed
3 Citizen, which is a selection of newspaper
4 articles from around the country. And we have the
5 statistics that Lucy Allen or someone else has
6 compiled from those news articles.

7 I also mention in my report that,
8 having worked as an expert witness in shooting
9 cases for 39 years now, including both police and
10 civilian shooting cases, I have a great suspicion,
11 if you will, distrust, mistrust, of the accuracy
12 of newspaper articles in recounting just what
13 happened in a shooting, especially the number of
14 shots fired.

15 Newspaper reporters get to the scene.
16 They talk to somebody. Someone says, oh, yeah, I
17 heard five shots. Now it's in the newspaper. You
18 know, some other witness to that event might have
19 heard two shots. And some other witness heard 11
20 shots. And what we find on the scene are six
21 ejected cartridge casings, all of the same
22 caliber, all from the same gun, which was the only
23 gun fired at the scene. So it's pretty clear that
24 six shots were fired, not two, not 11, et cetera.

25 So the source of information is

1 biased by its nature. And the source of
2 information is inaccurate as any law enforcement
3 investigator of shootings will tell you.

4 Q. In the case of a defensive situation
5 in which the defender does not fire a firearm, is
6 an assailant more likely to be deterred by the
7 display of a firearm if he believes that the
8 defender can shoot more accurately?

9 A. More accurately, or that it's a
10 bigger firearm or a more visible firearm. Keep in
11 mind, often people who attack others are full of
12 drugs or are drunk. I've been involved in
13 situations where people who had guns pointed at
14 them didn't even realize it at the time because
15 they were so drugged out of their mind or so drunk
16 or whatever.

17 A large gun, whether it's a shotgun
18 or AR-15, something that is large and visible and
19 which the user can -- the attacker can identify as
20 being something that holds a lot of ammunition and
21 is going to be an effective weapon, is a better
22 deterrent than a small handgun.

23 Q. If a person trains in the use of a
24 bayonet attached to a rifle, could a person use a
25 bayonet attached to a rifle in self-defense?

1 A. They -- they could. It would have to
2 be a situation within bayonet length of someone.
3 You know, within arm's length, yes, you could use
4 it. That's why soldiers are given bayonets. But
5 it would be a surprising situation.

6 MR. SCHMUTTER: I have no further
7 questions.

8 MR. VANNELLA: Just a couple of
9 rebuttal questions for Mr. Kapelsohn.

10

11 * * *

12 RE-EXAMINATION

13 BY MR. VANNELLA:

14 Q. The Lucy Allen report, your opinion
15 is that newspaper articles in general can be
16 inaccurate. Is that a fair description of your
17 opinion on that?

18 A. That's one part of my opinion.

19 Q. And that they are, in particular,
20 inaccurate about details in shooting situations
21 such as the number of bullets that are fired,
22 correct?

23 A. I'm not sure I would say in
24 particular. But that's one of the things in which
25 I found them to be inaccurate.

1 Q. And you also testified that, in your
2 opinion, newspaper articles tend to go after the
3 more sensational stories, I think as you put it,
4 if it bleeds it leads, is that correct?

5 A. Yes.

6 Q. So if that is all true, wouldn't one
7 assume that, if anything, newspaper articles
8 disproportionally report cases in which large
9 number of bullets were fired, as opposed to fewer
10 or none at all?

11 A. They might if the number were known
12 at the time the article is being written, which
13 often it is not. But the fact is, there are a
14 limited number of articles and limited number of
15 incidents selected. Even though it's large, they
16 get a -- I don't know if incidents in which over
17 ten rounds are used, okay. If they looked at
18 another thousand cases, maybe they would get ten
19 more incidents in which over ten rounds were used.

20 I don't want to be one of those 12
21 people who needed more than ten rounds and didn't
22 have them because of the New Jersey law. It's
23 like when New York City Police Department, which
24 is 37,000 officers, more or less, were carrying
25 six-shot revolvers, surprise, surprise, the

1 average number of shots fired by officers in
2 self-defense shootings was less than six, because
3 that's how many they had before they ran out of
4 ammunition. There were relatively few cases in
5 which they did or had time to or the ability to
6 reload.

7 Once they switch to semi-automatic
8 pistols, the number of shots went up. Is it
9 because the crime situations got worse? Or is it
10 because officers had more shots at their disposal,
11 and so they used them when they needed them?

12 So, you know, there are many things
13 that need to be looked at in looking at statistics
14 to try to determine whether the statistics tell us
15 how many rounds are actually needed in shootings
16 or not.

17 Q. Refresh my recollection that Exhibits
18 2 through 8 of your June 15th report were news
19 articles?

20 A. I think they were news articles, yes.
21 I don't know that they're all from newspapers. I
22 think they're all news articles, as I recall them,
23 at least right now.

24 Q. Well, when you say that newspaper
25 articles are -- can be inaccurate, are you just

1 talking about literal newspaper articles, or any
2 news articles regardless of whether they're
3 published in a newspaper or just online?

4 A. It could be any news article. But
5 the number of shots was not the reason that I
6 attached those articles as exhibits. It's because
7 they were all cases in which AR-15s were used in
8 self-defense, which was the point I was
9 addressing.

10 Q. (Inaudible).

11 MR. SCHMUTTER: Can't hear you.
12 Can't hear you.

13 BY MR. VANNELLA:

14 Q. You answered one of Mr. Schmutter's
15 questions (inaudible) how the accuracy of the
16 shooter, you know, could depend on whether they
17 are under the influence of drugs or under alcohol.
18 And you mentioned that many shooters in criminal
19 situations are, is that a fair --

20 A. No, I didn't.

21 Q. -- summary?

22 A. No, I didn't talk about the accuracy
23 of shooters. I talked about the ability of
24 criminal perpetrator to notice a gun often in poor
25 light in the hands of a defender. And I said the

1 bigger the gun, the more likely it will be
2 noticed. And the bigger the gun, the more likely
3 it will be an effective deterrent.

4 Q. But your opinion is that if someone
5 is drunk or under the influence of drugs, they
6 would, nevertheless, be able to comprehend that
7 this is a bigger gun and, therefore, a bigger
8 threat then?

9 A. I don't know whether any given
10 individual would or not. I think, in general,
11 that is true.

12 Q. Are you relying on any specific data
13 or other evidence in support of that statement?

14 A. Largely anecdotal evidence from
15 criminals, people who said, I saw that shotgun and
16 I was not going any further. Or I heard the
17 person cycle the shotgun, or I saw that rifle or
18 whatever. That kind of information gained over
19 years of work in this field.

20 MR. VANNELLA: I don't have any
21 further questions, Mr. Kapelsohn. Thank you very
22 much for your time today. And your -- for being
23 here all day -- for being at the Veritext office
24 all day. And we appreciate your time and your
25 testimony.

1 THE WITNESS: Thank you, sir.

2 MR. SCHMUTTER: Thank you.

3 (Concluded 4:54 p.m.)

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CERTIFICATE

I do hereby certify that the aforesaid
testimony was taken before me, pursuant to notice,
at the time and place indicated; that said
deponent was by me duly sworn to tell the truth,
the whole truth, and nothing but the truth; that
the testimony of said deponent was correctly
recorded in machine shorthand by me and thereafter
transcribed under my supervision with
computer-aided transcription; that the deposition
is a true and correct record of the testimony
given by the witness; and that I am neither of
counsel nor kin to any party in said action, nor
interested in the outcome thereof.

A handwritten signature in black ink, reading "Leandra M. Stoudt", is written over a horizontal line.

Leandra Stoudt, RPR, CRR
CBC, CCP, Notary Public

INSTRUCTIONS TO WITNESS

Please read your deposition over carefully and make any necessary corrections. You should state the reason in the appropriate space on the errata sheet for any corrections that are made.

After doing so, please sign the errata sheet and date it.

You are signing same subject to the changes you have noted on the errata sheet, which will be attached to your deposition.

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ACKNOWLEDGMENT OF DEPONENT

I, _____, do hereby certify that
I have read the foregoing pages ____ to ____ and
that the same is a correct transcription of the
answers given by me to the questions therein
propounded, except for the corrections or changes
in form or substance, if any, noted in the
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DATE SIGNATURE

Subscribed and sworn to before me this

____ day of _____ of 2023.

My commission expires: _____

Notary Public

[& - 16]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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June 15, 2023

Daniel L. Schmutter, Esq.
Hartman & Winnicki, P.C.
74 Passaic Street
Ridgewood, NJ 07450

Re.: Ellman, et al. v. Platkin, et al., and Association of New Jersey Rifle & Pistol Clubs, Inc. et al. v. Platkin, et al.

Dear Attorney Schmutter:

I am writing to provide my expert report in the two above-referenced cases.

Preparation. In preparation, I have reviewed materials you have provided, including the Complaint for Declaratory and Injunctive Relief in the case of Blake Ellman, et al. v. Matthew Platkin, et al., the Amended Complaint for Declaratory and Injunctive Relief in the case Association of New Jersey Rifle & Pistol Clubs, Inc., et al. v. Matthew Platkin, et al., lists of firearms and firearms features prohibited by New Jersey law, and various materials from my own library which are cited below.

Qualifications for Rendering Opinions. In addition, I am of course also relying on my own education, training and experience, amassed throughout a lifetime of using and working with firearms, both personally and professionally, as described in detail below.

I am an expert, consultant, instructor and expert witness in matters including firearms, ballistics, shooting scene reconstruction, firearms safety, firearms training, police training and tactics, self-defense, and the use of force. I have been retained by the plaintiffs in the two above-referenced cases to provide expert opinion testimony regarding the design, usage, utility, safety features, and lethality of modern semiautomatic rifles, including but not limited to the AR-15

type rifle in its common configurations discussed below, as well as semiautomatic shotguns. I have personal knowledge of the facts stated herein, and if called as a witness, I could competently testify to these facts.

I have been a professional instructor and instructor-trainer (an “instructor-trainer” being one who trains and certifies instructors) in firearms, tactics, self-defense, and use of force, for law enforcement and security officers, police instructors, law enforcement agencies, military personnel, and private (i.e., non-law enforcement) individuals throughout the United States, and occasionally in other countries, over approximately the past 44 years. I estimate that I have trained over 17,000 individuals in these skills and topics.

I have been certified as a firearms instructor by the Federal Bureau of Investigation (“FBI”), National Rifle Association (“NRA”), New Jersey Police Training Commission, Pennsylvania Municipal Police Officers Education & Training Commission, Glock, Heckler & Koch (“HK”), and others. My instructor certifications cover rifles of all sorts, handguns, and shotguns, and cover the training of police, security personnel and civilians in the recreational and defensive use of firearms. I am also certified as a Chief Range Safety Officer, that being someone who is trained to supervise other instructors on a multi-range facility, and to oversee the operations of the facility from a safety standpoint. I was an instructor at the Burlington County (New Jersey) Police Academy from approximately 1986 to 1995, and was an instructor at the Allentown (Pennsylvania) Police Academy from 1999 to 2007. I taught a course I developed entitled “Police Use of Force” in the Criminal Justice Department of Indiana University in Bloomington, Indiana for two years while I lived in Indiana. I instructed in a three-year series of Senior Firearms Instructor Classes for the federal Bureau of Alcohol, Tobacco & Firearms, taught at various locations on the East and West Coasts, including Orlando, Los Angeles, San Francisco, and San Diego. I have regularly been a presenter on firearms-related topics at annual and regional training conferences of the International Association of Law Enforcement Firearms Instructors (“IALEFI”), the International Law Enforcement Educators & Trainers Association (“ILEETA”), and in past years the American Society of Law Enforcement Trainers (“ASLET”).

Law enforcement agencies for which I have conducted instructor-level training in firearms include the New York State Police (multiple courses), Oregon State Police, Louisiana State Police, Missouri Highway Patrol, Washington D.C. Metropolitan Police (two courses), the Maryland National Capital Park Police, Massachusetts Metropolitan Police, the Massachusetts Criminal Justice Training Council, the Tennessee Bureau of Investigation, the North Carolina Justice Academy (multiple classes), the Connecticut State Police Academy (multiple classes), Henrico County (VA), Yellowstone County (MT), Billings (MT), the San Francisco Sheriff's Office, El Cajon (CA), Yolo County (CA) Sheriff's Office, Snohomish County (WA) Sheriff's Office, Toronto Metropolitan Police Service (Emergency Task Force and Dignitary Protection Unit), Calgary Police Service Tactical Unit, Salt Lake County Sheriff's Office, Nevada State Fire Marshal's Office, and the Police Departments of Philadelphia, Baltimore, Dallas (two courses), Phoenix (multiple courses), Miami, Jacksonville (two courses), St. Petersburg, Seattle, Tacoma, and many others.

In New Jersey, in addition to my teaching as a staff instructor at the Burlington County Police Academy, I have conducted law enforcement instructor-level training in firearms and/or armorer training, for the police departments of Jersey City, Trenton, Atlantic City (multiple courses), Mt. Laurel, Midland Park, Ramsey, Jefferson Township, the Cape May County Police Academy, the Middlesex County Police Academy, the Essex County Police Academy, the Bergen County Police Academy, the New Jersey Department of Corrections, and the New Jersey Division of Fish & Wildlife Law Enforcement Bureau, among others. I co-instructed a police counter-sniper rifle course at Fort Dix, hosted by the New Jersey State Police, and two Senior Firearms Instructor Courses for the Union County Prosecutor's Office. For all but one of the past 33 years I have conducted Police Firearms Instructor Recertification Courses annually for the Atlantic County Prosecutor's Office, attended by all law enforcement firearms instructors in Atlantic County.

Training I have conducted in New Jersey for non-police includes programs for the New Jersey Armored Motor Carriers Association, programs for three armored car companies and one precious metals company, training for executive protection and estate security personnel, and self-defense firearms classes, including training with handguns, shotguns and rifles, for non-law

enforcement individuals in Ledgewood, Sussex, New Egypt, Berkeley Township, Princeton Junction, and Pleasantville, and several armed security officer training programs conducted in East Brunswick.

I have consulted extensively for years for the Pennsylvania Municipal Police Officers Education & Training Commission (“MPOETC”). Among other things, I served on the curriculum development committee that wrote the firearms and use of force curriculum that was used at police academies throughout the Commonwealth of Pennsylvania for some 18 years. I conducted instructor-training courses for the MPOETC at the Pennsylvania State Police Academy at Hershey, at Fort Indiantown Gap, and at other locations; have served as a subject matter expert that established Patrol Rifle Guidelines (“patrol rifles” being AR-15 type rifles and other semiautomatic rifles) distributed to law enforcement agencies throughout Pennsylvania, and most recently served on the MPOETC committee that created a mandatory in-service Use of Force training program (including teaching the pilot course and an instructor-training course) that was presented to over 24,000 police officers throughout the Commonwealth of Pennsylvania.

I have served for some 35 years on the IALEFI Board of Directors, and for about the past 10 years have been First Vice President of that association. IALEFI publishes authoritative materials and guidelines for law enforcement training, and conducts police firearms and use of force training programs, including a week-long Annual Training Conference attended by hundreds of law enforcement firearms instructors from all parts of the United States and various foreign countries. IALEFI also conducts regional, instructor certification, and master instructor development firearms training programs each year at locations throughout the country, as well as occasional international programs in other countries.

I have served as a sworn, armed reserve deputy sheriff or special deputy sheriff for two sheriff’s departments over the past 25 years, have served as a firearms and use of force instructor at both of those departments, and have had first-hand experience in a wide range of law enforcement activities, up to and including the arrest of criminals at gunpoint, and dealing with barricaded gunman situations. I have been qualified with, and have carried and used AR-15 rifles in my service with both of those departments.

Concerning my experience, knowledge, and expertise with semiautomatic rifles in general and AR-15 type rifles in particular, I have owned and used semiautomatic rifles since I was sixteen, that is, for the past 55 years. I have hunted with a semiautomatic rifle since I was sixteen. I have, since the 1970's, owned and used Ruger Mini-14 rifles. The Mini-14 is a semiautomatic, .223 (5.56mm) caliber rifle that is functionally virtually identical to the AR-15 rifle in terms of its ballistics, rate of fire, and other capabilities, although most of the Mini-14's variants have not had some of the AR-15's military-looking features that the New Jersey legislation on "assault weapons" (called "assault firearms" in New Jersey law) finds objectionable, such as the pistol grip and flash suppressor. I currently own several Ruger Mini-14 rifles, and I have personally carried Mini-14 rifles for defensive purposes on three continents. I have owned and used AR-15 rifles since the 1980's. I served as the Line Judge for Colt Firearms at the first Colt Cup rifle competition ever held, which was fired with AR-15 rifles in Connecticut. I have been certified as an AR-15 Armorer by Colt, and as an FN-15 Armorer by FN (Fabrique Nationale). An armorer is an individual trained and certified to inspect, maintain, and repair a certain model or category of firearms by the manufacturer of the firearms. Certification as an armorer means I am fully conversant with the internal parts and workings of the AR-15, its design and function. The FN-15 is an AR-15 clone, manufactured by FN and functionally identical to the Colt AR-15. It is used as a patrol rifle by my sheriff's department. I have written several published articles about the AR-15 and other semiautomatic rifles, and have on at least two occasions worked as a consultant to manufacturers of such rifles. I currently own several AR-15 rifles, as well as M1A rifles, M1 Garand rifles, US M1 Carbines, Mini-14s, semi-automatic variants of the AK-47 rifle, an SKS rifle, a Ruger 10/22, an AR-7 survival rifle, and other semiautomatic rifles that the New Jersey legislation in question might categorize as "assault weapons." I have also owned and used other semiautomatic rifles, including the Steyr AUG, the FN-FAL, several semiautomatic .22 rimfire rifles, an H&K 91, and several IWI Tavor rifles. I assisted IWI in the development of its Police Armorer Course for the Tavor rifle, and in preparation of its Armorer Manual. I have also at times worked as a consultant to Sturm, Ruger & Co., Steyr, and Lancer Systems, all of which are manufacturers of semiautomatic rifles and of what the New Jersey legislation would call "assault firearms" and "large capacity ammunition magazines."

I have taught police user-level and instructor level courses in what police call “patrol rifle” (i.e., AR-15 type rifle) in 1999, 2003, 2004, 2009, 2010, 2012, 2017 and 2018, have taught a “Shoulder Weapon Selection” course at the Connecticut State Police Academy in 1994, Counter-sniper Rifle Courses at Ft. Dix (NJ) and at the Glastonbury Police Department in Connecticut, Special Weapons and SWAT Team courses addressing the AR-15 rifle at the Atlantic County (NJ) and Cape May County (NJ) Police Academies, assisted in conducting AR-15 rifle training and qualification sessions for my sheriff’s departments in Indiana and Pennsylvania, and for the Berks-Lehigh Regional Police in Pennsylvania, and was a presenter on the Patrol Rifle Panel at the ILEETA Annual Conference in St. Louis in 2017.

I achieved competitive rankings as a Junior Smallbore Rifle Expert and Light Rifle Expert in my teenage years, and have thereafter been certified as a High Power Rifle Expert, Patrol Rifle Expert, Patrol Rifle Instructor, and Police Precision Rifle Instructor. I successfully graduated from the NRA’s Police Rifle Instructor Development Course taught at USMC Base Quantico, Virginia, from the NRA’s Precision Rifle Instructor School held at The Crucible in Fredericksburg, Virginia, from the IACP’s Counter-Sniper Rifle Course at Fort Dix, New Jersey, from Gunsite’s General Rifle Course (using an M1A semiautomatic rifle) with an Expert rating, from the Thunder Ranch “Urban Rifle” course (using an AR-15 rifle and a Steyr AUG semiautomatic rifle), and from the U.S. Army Marksmanship Training Unit’s Counter-Sniper Rifle Course at Fort Benning, Georgia. With handgun, I have held the rating of Distinguished Expert, which is a higher rating than expert, and I was an “A” Class IPSC Combat Pistol Shooter and qualified for the Indiana “Governor’s Twenty.”

I began to shoot shotguns in my early teenage years, and I have hunted with shotguns for the past 55 years in locations including Connecticut, New York, New Jersey, Pennsylvania, South Carolina and Louisiana. I have participated, and sometimes competed, in the clay pigeon sports of skeet, trap and sporting clays, and have fired shotguns in Three Gun Competition and Combat Shotgun events. I am certified to teach shotgun both to law enforcement and to “civilians” (i.e., non-law enforcement). I have placed on a winning team with shotgun in a national event. My firearms inventory contains several dozen shotguns, including semiautomatic shotguns that, because of their specific features, would be prohibited by the New Jersey “assault

weapon” statute. I own or have owned shotguns of all other common types, including break-open (hinge action) single-barrel and double-barrel shotguns, pump-action shotguns, and bolt-action shotguns in all gauges from 10-gauge through .410. I have taught shotgun to law enforcement and to “civilians” in Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Indiana, Virginia, Florida, Utah, Washington D.C., Canada, and Africa. I helped to develop and teach a Police Shotgun Armorer’s Program for O. F. Mossberg & Sons, the world’s largest manufacturer of shotguns. I am certified as a shotgun armorer not only by Mossberg, but by Benelli for its semiautomatic shotguns.

In addition to the AR-15s and other semiautomatic rifles mentioned above, I have owned and used bolt-action rifles, lever-action rifles, break-open single shot (“hinge action”) rifles and combination guns, pump-action rifles, and black powder muzzle-loading rifles. In addition, I have owned and used select-fire M16 rifles (which are true “machine guns” capable of fully automatic fire), as well as select-fire submachine guns of various brands and types, also capable of fully automatic fire. I have also fired other fully-automatic firearms, including military belt-fed machine guns and automatic weapons fed from large box magazines. I have received armorer training, and have worked as an expert witness, in two cases involving the GAU-17 and other motor-driven, fully automatic “mini-guns,” typically mounted on helicopter gunships, military patrol boats, and other military vehicles, capable of cyclic rates of fire ranging from 2,000 to 4,000 rounds per minute. I am thus conversant with all types of rifles, their designs and functioning characteristics, their capabilities, ballistics, and features, and have actual, first-hand knowledge of the differences between true military weapons and the semi-automatic rifles, shotguns and handguns addressed by the New Jersey legislation. I have also written over 30 published articles about handguns, handgun ammunition, and handgun technique, and at least seven published articles on shotguns (including semiautomatic shotguns), shotgun ammunition, and shotgun technique. I have served as a consultant on design features to major manufacturers of rifles, shotguns and handguns.

I have been a regular presenter at state, regional, national and international conferences of law enforcement instructors, including but not limited to ASLET, IALEFI, and ILEETA. I taught classes at last year’s IALEFI Annual Training Conference in Melbourne, Florida and at an

ILEETA Conference in St. Louis, Missouri, where I was a panelist on both the ILEETA Deadly Force Panel of Experts and the ILEETA Active Shooter Panel of Experts. I have previously been a presenter at ILEETA Annual Conferences in St. Louis, and before that when they were held in the Chicago area. I have been a panelist on several other expert panels at these instructor training conferences.

I have authored over 125 published articles in the firearms and tactics field. I was Technical Editor of The Police Marksman magazine, where I performed technical reviews and evaluations of firearms, ammunition, and firearms accessories of all sorts. I am the principal author of Firearms Training Standards for Law Enforcement Personnel, the Associate Editor of Standards & Practices Guide for Law Enforcement Firearms Instructors, and the principal author of the IALEFI Guidelines for Simulation Training Safety, originally published in 2004 with a recently-published revision in 2023.

In total, I have trained what I estimate to be some 17,000 students in my classes. I have watched them fire literally millions of rounds of ammunition from rifles (mainly AR-15s and other semiautomatic rifles), handguns of all sorts, shotguns, submachine guns, and machine guns. I have watched others fire many millions more rounds from such firearms in training classes, qualification exercises, competitions, and firearms demonstrations. I myself have fired hundreds of thousands of rounds of ammunition from such weapons. I have owned and/or used firearms, including select-fire and fully automatic firearms, with suppressors (“silencers”), flash suppressors, detachable box magazines, drum magazines, pistol-grip stocks, folding stocks, telescoping stocks, barrel shrouds, and other features addressed by the legislation in question. I will next be involved in police AR-15 training and qualification within the next few weeks for my sheriff’s department here in Pennsylvania. I have actual – not just theoretical or academic – hands-on experience with all of the types of firearms and firearms design features addressed by the legislation in question in these lawsuits.

I have over the past 55-plus years visited at least many hundreds, if not thousands, of stores and shops where firearms, ammunition, and firearms accessories are sold, gunsmithing shops, firearms factories, firearms industry trade shows, and gun shows where firearms and

firearms accessories are bought and sold. The stores range from small local gun shops in all parts of the United States where I have traveled to large national chains like Cabela's, Bass Pro, Academy, Gander Mountain, Sportsman's Warehouse, and Walmart. The shows range from local gun shows to the annual SHOT Show in Las Vegas, hosting over 2,400 exhibitors from all over the world and attended by over 60,000 people. I am thus very familiar with the firearms and firearms accessories, including such things as folding and telescoping stocks, flash suppressors, and magazines, that exist on the market and that are used by legitimate purchasers throughout the country.

I have served as an expert witness in numerous courts since 1984. In total, I have served as an expert in over 400 cases, and have testified roughly 100 times in criminal and civil trials in state and federal trial courts throughout the United States, in addition to testimony before grand juries, police boards, administrative courts and tribunals (including the U.S. Government Accountability Office or "GAO"), state and city legislative committees, and before committees of both Houses of the United States Congress on firearms issues. In total, I have been qualified and have testified as an expert in some 15 federal courts in 13 states, and in some 45 state courts in 22 states. I have testified as an expert in U.S. District Courts in Pennsylvania (all three districts), Connecticut, New York, New Jersey, California, Maryland, Tennessee, Louisiana, Arkansas, Florida, Montana, Illinois, and Oregon. In 2020-2021, I testified as a firearms expert before the U.S. District Court for the Southern District of California in Miller v. Becerra, a case concerning California's "assault weapons" law that involved many issues similar to those in this case. I have also served as an expert in many cases that have been dismissed, settled, plea bargained, or for some other reason have not gone to trial or have not required my trial testimony, in at least 23 other states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Canada.

In New Jersey, I have testified as a firearms expert in the U.S. District Court, in Superior Courts in Essex, Union, Camden, Burlington, Atlantic, and Cape May counties, in Camden City Municipal Court, before several grand juries, and in hearings before the New Jersey Office of Administrative Law. These matters have included civil cases, and criminal cases in which I have testified sometimes as a defense expert witness, and other times as a prosecution expert witness.

Throughout the country, I have served as an expert in several cases involving AR-15s and other semiautomatic rifles, as well as in many cases involving shotguns.

Further details of my training, experience and qualifications are contained in my curriculum vitae, attached as **Exhibit 1** hereto.

OPINIONS AND ANALYSIS

Semiautomatic Firearms: Function and History. A semiautomatic firearm uses the power of the firing cartridge, typically either through diverting some of the pressurized gas from the cartridge's burning propellant gunpowder, or through the rearward recoil produced when the projectile moves forward out of the cartridge case, to operate the gun's mechanism, extracting and ejecting the fired cartridge case and bringing a fresh cartridge into position for firing. In a semiautomatic firearm, the trigger must be pulled separately for each shot. A semiautomatic firearm differs from a manually operated repeating firearm, such as a bolt-action, lever-action, or pump-action firearm, in which the user manually operates the mechanism to bring a fresh cartridge into position for firing. The semiautomatic also differs from a fully automatic ("automatic") firearm – such as a "machine gun" -- in which holding the trigger depressed will result in a continuous, rapid series of shots until the trigger is released or the ammunition supply is exhausted. Semiautomatic firearms are not a new invention. Semiautomatic rifles, shotguns, and handguns were all developed before 1900, and were in common use in the early 1900's. Our military first adopted a semiautomatic pistol (the Colt .45 caliber Model 1911) in the year 1911.

Armalite, an American small arms engineering firm located in California, developed the AR-15 in the 1950's. It was designed in large part by Eugene ("Gene") Stoner, a famous American firearms designer whom I met and spoke with several times. In 1959, due to financial and production problems, Armalite sold its rights to its AR-10 and AR-15 designs to Colt's Manufacturing. The model designation "AR-15" stands for "Armalite Rifle, Model 15," not for "assault rifle" as some uninformed individuals maintain. A version of the rifle, in "select-fire"

form (meaning it could, by operation of a selector switch, be fired either semiautomatically, i.e., one shot for each pull of the trigger, or fully-automatically, i.e., continuous firing as long as the trigger was held depressed), was first used by our military in the Vietnam War as the M-16. AR-15 type rifles, also called “MSRs” or “Modern Sporting Rifles,” are today among the most popular rifles sold and used in the United States. They have been manufactured by literally hundreds of companies, including Colt, FN, Ruger, Remington, Bushmaster, Rock River Arms, Wilson Combat, Barrett, DPMS Panther Arms, H&K, Lewis Machine, Olympic Arms, Palmetto State Armory, and Mossberg. The National Shooting Sports Foundation (NSSF), a firearms industry trade group, estimated about five years ago that there were, at that time, between 5 and 10 million AR-15 rifles in civilian hands in the United States. In recent years popularity and sales of the AR-15 have increased greatly, and it has now become one of the most popular rifles and widely-used rifles in the country. AR-15s are made or assembled and sold by many manufacturers, ranging in size from one-man shops to large companies such as Colt, Ruger, Remington, Mossberg, SigArms, Rock River Arms, and others. Current estimates of AR-15 and AK-type semiautomatic firearms in civilian hands in the United States are in the range of 25 million or more. The “AK” stands for Automat Kalashnikova, or Kalashnikov Automatic Rifle. First produced as a Soviet military rifle in 1947 (thus “AK-47”), the AK was the invention of Russian firearms designer Mikhail Kalashnikov. The AK became one of the most widely-used rifles in the world, with semiautomatic versions being sold in the United States and other countries for civilian use. While made in a number of calibers, the most commonly seen caliber for the AK rifles is 7.62 x 39mm, a larger caliber than is used in the standard AR-15 rifle, which fires the .223 Remington or 5.56mm NATO cartridge.

For the sake of clarity, I must emphasize that while I have discussed the military “select fire” M16 rifle above, as well as the semiautomatic-only civilian AR-15 rifle, the challenged version of the New Jersey “assault firearms” law has nothing to do with the military M16 select-fire rifle, only with the AR-15, the civilian semiautomatic version that fires one single shot for each separate pull of the trigger, just as all other semiautomatic firearms do. The select-fire (“fully automatic”) M16 version of the rifle is heavily regulated under federal law and other New Jersey statutes, and is not involved in this case.

Semiautomatic Rifle and Pistol Magazines. The AR-15 uses a detachable box magazine for the .223 Remington or 5.56mm NATO cartridge. These two rounds are very similar, and can be used interchangeably in many AR-15s. The most common magazine size for the AR-15, and the size of the great majority of magazines manufactured and sold for the AR-15, is 30 rounds. The next most commonly seen magazine size is 20 rounds. Magazines of 5, 10 and 40 rounds are also available, as well as other sizes, but are relatively rare. Over the past decades I have personally seen tens of thousands of 30-round AR-15 magazines, perhaps a thousand 20-round AR-15 magazines, and fewer than 100 AR-15 magazines of all other sizes combined. The New Jersey law is incorrect and misleading when it describes 20-round and 30-round AR-15 magazines as “large capacity ammunition magazines.” They are, to the contrary, the standard-sized magazines for the AR-15.

The AK-type firearms also use detachable box magazines. Far and away the most commonly seen and commonly available magazine for the AK firearms holds 30 rounds, although both smaller capacity and larger capacity magazines are available. The most widely-available and commonly seen magazines for other semiautomatic rifles, including the Ruger Mini-14, Steyr AUG, M1A, Galil and others are 20 to 30 rounds. Standard-size magazines for the M1 Carbine are 15 and 30 rounds.

With an estimated 25 million AR-15 and AK-type firearms in civilian hands in the United States, there are certainly many times that number of 20-round and 30-round magazines in private ownership as well. In my opinion, estimates that there are currently 100 million or more 30-round AR-15 magazines in circulation and quite credible. Magazines are relatively inexpensive, with either metal or plastic 30-round AR-15 magazines commonly selling for \$10 to \$15 each, whereas the rifles in which the magazines are used may cost \$600 to \$1,000 or more. It is not unusual to see literally several thousand 30-round AR-15 and AK magazines for sale at a modest-sized weekend gun show.

The New Jersey law’s limit of handgun magazine size to 10 rounds imposes an unreasonable restriction on New Jersey gun owners, especially (but not only) those with concealed carry permits. Many popular semiautomatic pistols have greater magazine capacities.

Examples include the Glock 17 (17 rounds), the SIG P320 (17 rounds), and the Smith & Wesson M&P9 2.0 (17 rounds). Even the compact versions of these pistols – specifically, the Glock 19, the SIG P320 Compact, and the S&W M&P9 Compact, all have magazine capacities of 15 rounds. Some of the most popular “micro-9” pistols have magazine capacities that exceed the New Jersey limit, such as the Springfield Hellcat (11-round and 13-round magazines), the S&W Shield Plus (10-round and 13-round magazines), and the SIG P365 (10, 12, 15 and 17-round magazines). For many individuals carrying a concealed handgun for self-protection, carrying an extra magazine to compensate for the New Jersey law’s magazine size limit imposes and uncomfortable, and in some cases impossible, burden. Most police nationwide, including in New Jersey, carry handguns that hold 16-18 rounds, plus between one and three additional loaded magazines on their persons. If police officers need that many rounds to protect themselves and the public, why should gun owners in New Jersey be limited to fewer rounds to protect themselves and their loved ones?

Use and Advantages of the AR-15 Rifle. AR-15 rifles are commonly used for both formal and informal target shooting (including each year at the National Matches at Camp Perry, Ohio), for hunting, by farmers and ranchers for control of predators and pest animals, and for self-defense. They are also widely used by law enforcement agencies as “patrol rifles,” in many parts of the country all but completely replacing the 12-gauge shotgun as the shoulder weapon carried in most police cars. Anyone visiting a retail gun store in most states will likely see many AR-15 rifles for sale, as well as displays of magazines, accessories, and ammunition for these rifles. Similarly, someone taking a trip to most outdoor shooting ranges, and indoor ranges with rifle capability as well, will find many people target shooting with AR-15 rifles.

The AR-15 is especially popular because of its light weight, very mild recoil, and good ergonomics, all of which make it well suited to younger shooters, female shooters, and other shooters of smaller stature, as well as an easy rifle for larger, stronger individuals to use. All of these design features of the AR-15 – its light weight, mild recoil, and good ergonomics – as well as the adjustable length of its buttstock when fitted with a telescoping buttstock (as it commonly is), the effectiveness of its cartridge for self-defense use, and its better continuity of fire when used with its most commonly available 20-round and 30-round magazines, make the AR-15, in

many cases, a much better choice of shoulder weapon for self-defense by a female user or other smaller-statured user than the 12-gauge or other shotguns that have often been recommended for that purpose in the past. The shotgun, in fact, is much harder for most women (as well as most other shooters) to use, too heavy, ill-fitting in its commonly available stock configurations, and has recoil which is far too punishing, discouraging practice and resulting in poor competence and many safety problems. For the same reasons that the AR-15 has largely replaced the shotgun in police use, it is a better choice as a self-defense weapon for many private individuals as well. Other semiautomatic rifles which would be prohibited by the New Jersey legislation are similarly good choices as self-defense shoulder weapons for women and men alike.

A major disadvantage of the shotguns often recommended for defense in the home is the shotgun's considerable recoil. Used with the type of shotgun usually recommended for defensive use, the typical 12-gauge shotgun often has 25 foot pounds or more of free recoil when fired, which makes firing more than a few shots unpleasant or painful for many shooters. Even in police training programs, this much recoil becomes problematic, limiting the amount of shooting that can be done, and the familiarity and skill level with the shotgun that can be achieved. Also, the spreading pattern of shotgun pellets, whether birdshot or buckshot, creates a danger due to the possibility of pellets missing the intended target, even with a properly-aimed shot. In contrast, the AR-15 and similar semi-automatic rifles have little perceptible recoil, and are therefore much more pleasant to shoot. More shots can therefore be fired in training, and better familiarity with the firearm and accurate results can thus be more easily obtained. In many thousands of law enforcement agencies nationwide, the switch from shotguns to AR-15s and similar semiautomatic rifles as shoulder weapons has resulted in officers handling the guns with greater confidence and competence, and firing with accuracy, even at distances of 50 yards and more, far exceeding the accuracy most officers were ever able to achieve with shotguns. This results not only in greater effectiveness when the rifle must be used for self-defense, but greater safety as well, not only for the user but for any others who may be in the area. The same effectiveness and safety should be available to non-police officers as to police officers.

Use of the AR-15 and Similar Rifles for Self-Defense. My opinion that AR-15s and similar semiautomatic rifles are suitable for self-defense use by private individuals is supported

by many examples of such use. For example, a pregnant mother used an AR-15 to save the life of her husband, killing one of the two intruders who were terrorizing her family. Attached hereto as **Exhibit 2** is a true and correct copy of the digital article “Pregnant Florida Mom Uses AR-15 to Kill Home Intruder.

Another example was in Glen St. Mary, Florida in 2018, where seven home invaders were fought off by their would-be victim using an AR-15. One of the seven invaders was killed, and five others were arrested. The defender fired over thirty (30) shots in the process, underscoring the need for magazines that hold more than a few rounds of ammunition. Attached hereto as **Exhibit 3** is a true and correct copy of the digital article, “Deputies: 30 Rounds Fired From AR-15 in Deadly Florida Home Invasion.”

In another case, in Oswego, Illinois, a man named Dave Thomas, who was in legal possession of an AR-15, used it without the need to fire a single shot to stop a man who was repeatedly stabbing one of his neighbors. Attached hereto as **Exhibit 4** is a true and correct copy of the digital article “Man Armed With AR-15 Stops Attack By Neighbor in Oswego.”

In the highly-publicized 2017 active shooter event at the First Baptist Church in Sutherland Springs, Texas, in which the gunman killed 27 people and wounded 20 others, a 55-year-old plumber living across the street from the church, alerted by his daughter that a man was shooting people at the church, got his AR-15 out of his gun safe, loaded it, and exchanged shots with the gunman, hitting him twice, and then flagged down a passing motorist to pursue the gunman together when the gunman attempted to flee from the scene. Attached hereto as **Exhibit 5** is a true and correct copy of the digital article, “Texas Hero Reportedly Used His Own AR to Confront the Sutherland Springs Shooter.”

In a case in Harris County, Texas in 2013, a 15-year-old boy, at home with his little sister, used an AR-15 to drive off two burglars who had broken a window to enter the house. They fled, leaving a trail of blood. Attached hereto as **Exhibit 6** is a true and correct copy of the digital article, “Harris County Deputy’s Son Shoots One of Two Intruders.”

Also in 2013, a man with a .223 AR-15-type rifle in Montgomery County, Pennsylvania, successfully defended himself and his wife against an intruder, who died later in the hospital. Attached hereto as **Exhibit 7** is a true and correct copy of the digital article, “Elkins Park Man Killed After Forcing His Way Into Apartment.”

In 2017 in Broken Arrow, Oklahoma, three masked intruders were shot and killed by 23-year-old Zach Peters, the son of the home’s owner, using an AR-15 rifle. The shooting was ruled justifiable. Attached hereto as **Exhibit 8** is a true and correct copy of the digital article, “Shooting Deemed Justifiable: Authorities Say Zach Peters Acted Lawfully When He Shot, Killed Three Intruders.”

Numerous other cases in which the AR-15 and other semi-automatic rifles have been used in self-defense can be found. The fact that several of the above examples are cases in which a homeowner or other private citizen has had to fight off multiple attackers is significant in explaining the need for semiautomatic firearms and magazines that hold 20-30 rounds of ammunition.

It is incorrect, and in fact a common myth, that the .223/5.56mm projectile fired by the AR-15 and other rifles under consideration is too penetrative to be used safely for self-defense inside and around homes, businesses, farms and ranches. If that were the case, police would not be using AR-15 “patrol rifles” nationwide, including in urban and suburban areas, and as entry weapons for indoor searches and arrests. The fact is that with properly selected ammunition, the .223/5.56mm actually presents less danger of overpenetrating walls, floors, ceilings and criminal attackers than conventional self-defense handgun bullets in calibers such as 9mm, .40 S&W, and .45 Auto. This is because the .223/5.56mm has a much higher muzzle velocity and fires a much smaller, lighter projectile which, if properly selected as to projectile type (e.g., the self-defense type rounds that are widely available where ammunition is sold), will fragment easily and will be unlikely to penetrate as many sheetrock partitions or other common building elements as many common handgun bullets. I have demonstrated this to classes of police and others by firing through sheetrock and other materials, and many published studies confirm the same results. See attached hereto as **Exhibit 9** an article by R.K. Taubert (FBI, Ret.), “About .223 Penetration,”

Exhibit 10 “Real World Testing: .223/5.56 Penetration Tests vs. .40 S&W and 12 ga. Slug,” and **Exhibit 11** “Why ‘High-Powered’ 5.56 NATO/.223 AR-15 is Safer for Home Defense (FBI Overpenetration Testing),” Prepared Gun Owners, July 14, 2016.

Features of the AR-15 and Other So-Called “Assault Weapons.” The New Jersey statute, in addition to listing a number of prohibited “assault weapons,” identifies several features that supposedly distinguish “assault weapons” – as it defines that term -- from ordinary semiautomatic firearms. In actuality, the term “assault weapon” (unlike “assault rifle,” which is a compact, lightweight select-fire rifle firing an intermediate-powered cartridge) is a pejorative term created by legislative draftsmen which has no technical definition in the firearms field. See Standards & Practices Reference Guide for Law Enforcement Firearms Instructors, P. Covey and E. Kapelsohn, 1995, “assault rifle” and “assault weapon,” p. 5 ff.

The New Jersey statute categorizes as “substantially identical” to the banned firearms, and thus also banned, semiautomatic rifles that have the ability to accept a detachable magazine, and at least two of the following features:

1. a folding or telescoping stock;
2. a pistol grip that protrudes conspicuously beneath the action of the weapon;
3. a bayonet mount;
4. a flash suppressor, or a threaded barrel designed to accommodate a flash suppressor; or
5. a grenade launcher.

The statute also prohibits a semiautomatic shotgun that has at least two of the following features:

1. a folding or telescoping stock;
2. a pistol grip that protrudes conspicuously beneath the action of the weapon;
3. a fixed magazine capacity in excess of 5 rounds; or
4. an ability to accept a detachable magazine.

Having extensive personal experience as a user, as a firearms instructor, and as a consultant, with all of the design features identified by the legislation, and with their practical effects on the capabilities of firearms, I will address these features below.

Pistol Grips. One of the New Jersey law's prohibited features is a "pistol grip that protrudes conspicuously beneath the action of the weapon." The AR-15 is, as discussed above, a semiautomatic version of the select-fire military M16 and its predecessor, the Armalite Rifle Model 15 ("AR-15"). The M16 is designed, as its "select-fire" description indicates, to fire either semiautomatically, or automatically ("full-auto") by the positioning of its safety/selector lever for one or the other mode of fire. When firing automatically ("full-auto"), the military M16 has a cyclic rate of fire of 750-900 rounds per minute. In practical effect, with the most commonly used 30-round magazines, a shooter firing an M16 full-auto may actually be able to discharge roughly 250-300 rounds per minute, although not necessarily with good accuracy. In order to allow military users of the M16 to fire it full-auto while staying on target, rather than having significant "muzzle climb" while firing, the M16, and similar fully-automatic or select-fire rifles, employ what is termed a "straight-line design," meaning that the rifle's barrel and its stock, which is placed on the user's shoulder when firing, are in a straight line, so that recoil is transmitted straight rearward into the user's shoulder along the axis of the bore, which is the axis of recoil. Attached hereto as **Exhibit 12** is a diagram of a standard AR-15/M16, showing this straight-line design. In order to make the straight-line design possible, the front and rear sight assemblies of the M16 and AR-15 are raised considerably (about 2-1/2 inches) above the line of the rifle's bore (barrel), so that they will be in line with the shooter's eye for aiming, when the rifle's buttstock is seated on the user's shoulder in firing position. This differs from the conventional design of sporting rifles and shotguns (generally wooden-stocked), in which the sights are mounted much closer to the axis of the bore/axis of recoil, and the buttstock angles downward significantly to reach the user's shoulder. Because the buttstock and the point of shoulder support is thus significantly below the axis of recoil, such conventionally-stocked rifles exhibit a great deal of "muzzle rise" when each shot is fired. This slows down even semiautomatic or manually-operated shots from conventionally-stocked rifles, and would make it very hard to keep them on target if they could be made to fire full-auto. The purpose of the M16's straight-line design is to

eliminate this muzzle rise from shot to shot. However, because the M16 and AR-15 have a stock which comes straight back from the rifle's receiver to the user's shoulder, it then becomes necessary to provide a "pistol grip" that protrudes downward from the rifle's receiver ("action," per the New Jersey statute). Otherwise, the user would have to raise his or her dominant arm uncomfortably high to grip the rifle, operate the manual safety, and pull the trigger. In such a position, the dominant hand could interfere with aiming the rifle, in addition to which the trigger and trigger guard of the M16 and AR-15 are not located in a position that would make this contorted arm and hand position easily performable. The design purpose of the M16/AR-15's pistol grip is to position the user's hand properly and comfortably behind the trigger and trigger guard of the rifle – a position which would not be feasible for the user to assume without the pistol grip – and, in the case of the M16 when fired full-auto in military use, to provide better control of the rifle in full-auto fire.

Even when the rifle is fired semiautomatically, in the normal manner for the "civilian" AR-15, the straight-line stock design and the pistol grip reduces muzzle rise, allowing more accurate fire and faster follow-up shots.

Contrary to the claims of some anti-gun activists, a pistol grip on a rifle stock does not allow the rifle to be "wildly spray fired" in all directions. Certainly our Department of Defense would not want our military rifles, including our M16 and later evolved M4 rifles, to be so equipped. Neither would law enforcement agencies all over the United States, which are concerned with the accuracy and safety with which their AR-15 patrol rifles can be fired, including in areas which may be densely populated with innocent bystanders. The pistol grip on the AR-15 stock, and pistol grips on the stocks of other semiautomatic rifles and shotguns, also do not allow these rifles to be reloaded any faster than similar firearms without pistol grips. Instead, pistol grips on semiautomatic rifles and shotguns simply provide an appropriate and comfortable way of gripping these firearms, without contorting one's hand, wrist and arm into an unnatural position.

Largely because pistol grip stocks on semiautomatic rifles have proven to be so comfortable, and to permit good control of the weapon and its controls, pistol grip stocks have in

recent years grown in popularity on semiautomatic and pump-action shotguns as well. As with pistol grip stocks on semiautomatic rifles, pistol grip stocks on semiautomatic or other shotguns do not especially permit or induce “spray firing” (whatever that means), or faster reloading of the firearms. Pistol grip stocks, commonly used on rifles and shotguns throughout most of the United States, are simply a feature the New Jersey legislature seems to have chosen to identify rifles and shotguns it wishes to make illegal.

Folding or Telescoping Stocks. Another of the prohibiting features for both semiautomatic rifles and shotguns in New Jersey, is the firearm having a “folding or telescoping stock.” While the AR-15 can be equipped with a solid (that is, not telescoping) buttstock, telescoping buttstocks are far more popular, and are in fact standard on most AR-15 rifles sold today throughout the country, as well as on many other models of semiautomatic rifles.

What telescoping buttstocks do is allow for the rifle stock to be adjusted to properly fit the user. The U.S. military’s current telescoping buttstock for its M4 rifle (the modern evolution of the M16) allows the stock to be set for any of four to six different lengths. This allows the rifle to be used comfortably and fired accurately by shorter-statured shooters, including female shooters among others. It also allows the rifle to be adjusted for comfortable, accurate firing from different shooting positions, as a stock length that works well in the standing position may be too long for optimum use from a sitting or kneeling position. The telescoping stock also allows the stock to be shortened when the shooter is wearing heavy clothing, as in wintertime, and lengthened when lighter clothing is worn in warmer weather. Telescoping-style adjustable stocks are used for these same reasons on many other firearms other than semiautomatic rifles, including both pump-action and semiautomatic shotguns, for example the Mossberg pump-action Model 500 Tactical and ATI Tactical shotguns.

Folding stocks, in contrast to telescoping stocks, offer law-abiding firearms users the advantage of storing the firearm more conveniently, and transporting it to and from the range in a more compact carrying case.

Bayonet Mounts. Another prohibited feature is a “bayonet mount,” sometimes called a “bayonet lug.” This is typically a small steel block, welded to the barrel of a firearm a few inches back from the muzzle, which can be used to attach a bayonet to the rifle or shotgun. In fact, bayonet mounts are common on many types of civilian rifles and shotguns. Again, the New Jersey statute’s prohibiting of bayonet mounts, while sensational, is largely superfluous.

Flash Suppressors and Threaded Muzzles. Another of the prohibited features is a “flash suppressor,” or a threaded barrel designed to accommodate a flash suppressor. A flash suppressor is a fixture on the end of a rifle’s barrel that divides and diverts the muzzle flash through several slots or holes, most commonly arranged radially around the axis of the bore. The most common type of flash suppressor on AR-15 rifles is probably the Mil Spec A2 birdcage type, which has four slots from about the nine o’clock to three o’clock positions (that is, around the top 180 degrees of the suppressor), but is solid on the bottom in order not to raise clouds of dust or dirt when firing from a prone position on dry ground. Attached hereto as **Exhibit 13** is a picture of an A2 birdcage flash suppressor. Flash suppressors are not expensive accessories; for example, the Aero Precision A2 birdcage-type suppressor shown in Exhibit 13 retails for \$7.99. Flash suppressors are used on the vast majority of the millions of AR-15s and similar semiautomatic rifles throughout the United States.

The major advantages of a flash suppressor on a rifle’s barrel are: (1) the reduction of muzzle flash so as not to temporarily blind a shooter who is firing in a darkened environment, whether in a defensive situation or on an indoor shooting range, and (2) the reduction of muzzle flash from a military rifle, so as to minimize the illumination of the shooter, which might reveal his location to enemy troops in darkened environments. The flash suppressor also serves to protect the muzzle of the rifle from dirt, mud, sand, etc., which could dangerously plug the muzzle if it were to touch the ground outdoors. Purpose (1) above is important in a rifle used for self-defense by civilians, and legislation that prohibits flash suppressors makes rifles less suitable for self-defense use by civilians. Law enforcement statistics indicate that a high percentage of violent crime occurs during the hours of darkness, or in otherwise darkened environments (poorly lighted indoor areas, for example). Attached hereto as **Exhibit 14** is a digital article from Security Magazine, “Violent Crimes Most Likely to Occur At Night.” The use of a rifle without a flash

suppressor under those circumstances is likely to temporarily blind the user, or at least seriously impair the user's vision, placing the law-abiding user at a disadvantage to a criminal attacker, and increasing the danger to the public if the vision-impaired user must fire the rifle before his or her normal visual abilities return after an unsuppressed muzzle flash in the dark. **Exhibit 15** provides an example of the difference between an AR-15's muzzle flash with no flash suppressor (Exh. 15A), and the muzzle flash when a suppressor is used (Exh. 15B).

The value of the flash suppressor in protecting the rifle's muzzle from being damaged, or from being plugged with mud, dirt or sand if the rifle's muzzle touches the ground, is significant, and is stressed by some instructors in defensive rifle classes. I have personally seen a firearm's barrel burst upon firing when the muzzle was plugged with mud after inadvertent contact with the ground. Luckily no one was injured, but the results could have been catastrophic.

A great many rifles today come standard from the manufacturers with threaded muzzles, with the threads protected by screw-off metal caps. These threaded muzzles will allow the attachment of various muzzle devices, including flash suppressors, recoil-reducing muzzle brakes, or sound suppressors (so-called "silencers"). While sound suppressors are prohibited for civilian ownership in New Jersey, they are legal, with proper federal licensing, in many other states, including nearby Pennsylvania. Contrary to their portrayal on television and in movies as instruments of crime, sound suppressors do not make the report of most firearms nearly inaudible, and the suppressors have many legitimate purposes on semiautomatic rifles used for defensive purposes, whether by police or private individuals. The most important of those legitimate purposes is to allow the user to fire the rifle, especially in indoor environments, without suffering permanent hearing loss from the sound of shots. This can occur because, unlike shooting on a firing range while wearing hearing protectors, firing a .223 rifle without hearing protection, as would likely be the case in a self-defense situation, can in many cases result in some degree of permanent hearing loss. For this reason, police departments today are often equipping their AR-15 patrol rifles with sound suppressors to protect the hearing of their police officers.

Even though sound suppressors are not legal for civilian ownership in New Jersey, and regardless of whether or not the user wishes to, or can legally, attach a flash suppressor to the

muzzle of the rifle, the fact that New Jersey's "assault firearm" statute prohibits rifles with threaded muzzles eliminates many excellent threaded-muzzle firearms from being able to be sold, purchased or possessed in New Jersey.

One of the muzzle devices a threaded muzzle allows the user to attach to a rifle is a muzzle brake, which is a recoil-reducing device. Muzzle brakes are advantageous, are preferred by many shooters, and are perfectly legal under New Jersey. But because the New Jersey law lists threaded muzzles as one of the prohibiting features, it makes it much more difficult, if not in some cases impossible, for a New Jersey gun owner to make use of a muzzle brake for his semiautomatic rifle.

Prohibited Pistol Features. The New Jersey statute also prohibits semiautomatic pistols that have the ability to accept detachable magazines and have at least two of the following features:

1. A magazine that attaches to the pistol outside of the pistol grip;
2. A threaded barrel capable of accepting a barrel extender, flash suppressor, forward handgrip, or silencer;
3. A shroud that is attached to, or partially or completely encircles, the barrel and permits the shooter to hold the firearm with the non-trigger hand without being burned; or
4. A manufactured weight of 50 ounces or more when the pistol is unloaded.

The attachment point of the pistol's magazine (item 1 above) has nothing to do with the pistol's safety. Like other features discussed above, this is a common firearm feature that is only useful as a means of criminalizing certain firearms the State wishes to ban.

Threaded barrels (item 2) have already been discussed above. Increasing numbers of handguns today come from the factory with threaded muzzles. The advantages of a flash suppressor have already been discussed, and will not be covered again here. Flash suppressors are, in any event, rarely used on handguns. Silencers are illegal for ownership by private

individuals in New Jersey, so it seems fairly senseless to prohibit a pistol with a threaded barrel simply because that feature might allow the pistol to be fitted with a silencer. A “barrel extender” is usually a purely cosmetic feature, affecting only the appearance of the handgun. A forward handgrip may allow some people to hold pistol more firmly and fire it more accurately.

A barrel shroud (item 3 above) serves to protect the shooter’s hand from being burned by a barrel that has become hot from firing. Barrel shrouds have been commonly used on rifle and shotgun barrels since the early 1900’s, and are available on many rifles and shotguns today.

The total weight of the handgun (item 4 above), at 50 ounces when unloaded, makes the described firearm unusually large and heavy for a handgun. This, in turn, makes the handgun less easily concealed and carried. It is difficult to see how this forms a valid basis for prohibiting a firearm.

Shotgun Magazine Capacity. Another of the prohibited features is a semiautomatic shogun with a fixed magazine capacity of over five rounds. Many semiautomatic shotguns intended for self-defense use have magazine capacity of over five rounds. The Mossberg 930 (8-shot capacity) and several of the excellent Benelli tactical shotguns are examples. Because shotguns with fixed (i.e., tubular) magazines must be reloaded one round at a time – a slow and difficult process at best in a stressful self-defense situation – the magazine capacity of the shotgun is an important feature, as larger capacity reduces the likelihood that reloading during the midst of a self-defense shooting incident will be necessary.

Conclusion

New Jersey’s so-called “assault weapon” legislation appears to focus primarily on cosmetic features of firearms. In fact, the AR-15 is just another semiautomatic rifle, a type of firearm that has existed since about 1900. The AR-15 is, in many cases, an excellent rifle for law-abiding citizens to use for self-defense, as well as for target shooting, recreational shooting, and hunting or control of predators, rodents and other pest animals where game laws permit. Features such as flash suppressors, threads at the muzzle end of the barrel, pistol grips, telescoping or folding stocks, bayonet mounts, and the other features discussed above serve to criminalize rifles and shotguns, widely used by the tens of millions throughout most of the United States, that are

useful, accurate, and safe for law-abiding citizens to use. Pistol grips, flash suppressors, threaded muzzles, telescoping or folding stocks, detachable magazines for semiautomatic rifles, and shotgun magazine capacity in excess of five rounds, all have legitimate advantages to the law-abiding user. It appears that this legislation is either ill-informed, or that its intent is to prohibit some of the most widely used – because they are the most useful – firearms in existence in the United States, which are regularly chosen by law-abiding Americans to protect themselves and their loved-ones from violent crime.

Among the specific facts and opinions I have expressed in the foregoing report are the following:

1. Semi-automatic handguns, rifles and shotguns are not new, “evil” creations, but have been in use since before 1900.
2. The AR-15, AK-type, and similar semiautomatic rifles are owned and used by millions of law-abiding Americans for lawful purposes including self-protection, recreational shooting, hunting, and pest control.
3. 20-round and 30-round semiautomatic rifle magazines are not “large capacity ammunition magazines,” as the New Jersey law misleadingly states. To the contrary, these are the standard-sized magazines for many of the semiautomatic rifles addressed in this lawsuit.
4. Similarly, semiautomatic pistol magazines with capacities greater than 10 rounds are not “large capacity ammunition magazines,” but are, in many cases, the standard-sized magazines for those pistols.
5. AR-15 rifles and similar rifles are accurate, reliable, safe and easy to use effectively, which is why these rifles are often the firearms chosen by law enforcement and by private individuals for defensive use.
6. Limiting New Jersey gun owners to 10-round magazines for their semiautomatic rifles and pistols imposes an unreasonable and arbitrary disadvantage on them, which negatively affects their ability to defend themselves and their loved ones against violent criminal attack.
7. Pistol grips on semiautomatic rifles and shotguns are not “evil” features, but have

practical advantages in allowing the firearms to be controlled and fired accurately. On the AR-15, for example, these advantages are why Eugene Stoner, one of the world's foremost firearms designers, designed the AR-15 with a pistol grip rather than with some other kind of stock.

8. Telescoping stocks are not “evil” features, but can be adjusted to allow rifles and shotguns to be handled and fired effectively by shooters of various statures, in various shooting positions, and when wearing various types of clothing or equipment.
9. Folding and telescoping stocks for rifles and shotguns allow the firearms to be stored more conveniently, and transported more easily. Prohibiting bayonet mounts makes many excellent rifles and shotgun unavailable for sale to or ownership by New Jersey gun users.
10. Flash suppressors, which are very commonly possessed and used throughout the United States on AR-15s and other semiautomatic rifles, have a valuable purpose, make the rifles safer to use in dim light, and improve public safety as well.
11. The prohibition of threaded muzzles makes many excellent firearms unavailable for sale to or ownership by New Jersey gun users. The prohibition of threaded muzzles also makes it difficult or impossible for New Jersey gun users to use muzzle brakes – a perfectly legal device which valuable recoil-reducing advantages – on their firearms.
12. Some of the prohibited features in the handgun section of the law, such as barrel shrouds, provide specific, legitimate advantages to the firearms user. Other prohibited handgun features, such as where the magazine attaches to the handgun, or whether the handgun has a barrel extender, are arbitrary. The overall effect of the handgun section is simply to criminalize various handguns, based on an arbitrary list of features.
13. Especially given the slowness and difficulty of reloading a tubular-magazine shotgun during the stress of a self-defense confrontation, the limitation of semiautomatic shotguns to a capacity of 5 rounds places New Jersey gun users at a significant disadvantage in confrontations with violent criminal attackers.

All of the facts and opinions I have expressed in this report are accurate to a reasonable degree of professional certainty in my fields of expertise.

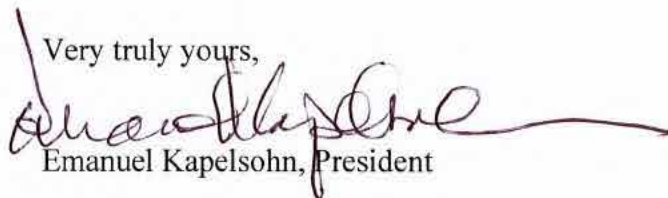
Very truly yours,

Emanuel Kapelsohn, President

EXHIBIT “1”

CURRICULUM VITAE: EMANUEL KAPELSOHN

PERSONAL DATA:

Born: April 23, 1952. Newark, NJ
Marital Status: Married, two children
Address: 1636 N. Cedar Crest Blvd. #320, Allentown, PA 18104
Telephone: 610-360-7053
Email: peregrine@ptd.net

ACADEMIC DEGREES:

Yale University. B.A. cum laude. English Literature (1974)
Activity: Varsity Heavyweight Crew (earned Varsity Letter)

Harvard Law School. Juris Doctor (1977)
Activity: Harvard Prison Legal Assistance Project

EMPLOYMENT:

- 1985 - President. The Peregrine Corporation. Design, evaluation and implementation of training programs for police, security, and other armed personnel and civilians throughout the United States and abroad, including use of force, firearms, defensive tactics, executive protection, and specialized training; instructor and armorer training and certification; consulting with regard to the selection of firearms and other equipment; technical evaluation and consulting regarding design and function of firearms and related products; security surveys and risk assessments; litigation consulting and expert witness services; production of videotape training programs, written training materials, training aids, product literature and warnings; writing articles for publication in law enforcement and firearms periodicals.
- 2009-10 Adjunct Instructor, Criminal Justice Department, Indiana University, Bloomington, IN. Taught Senior Seminar, "Police Use of Force" (2009, 2010)
- 2007 - Attorney. Lesavoy Butz & Seitz LLC. Allentown, PA. Civil litigation, municipal law, general practice, risk management. 2007 to present.
- 2006-7 Associate. Lamm Rubenstone Lesavoy Butz & David LLC. Allentown, PA . Civil litigation, municipal law, general practice.
- 1994 - Associate. Blank Rome LLP, Allentown, PA. Civil litigation, including state and federal
2006 court practice. Bar admissions: Pennsylvania Supreme Court, Federal District Courts for the Eastern and Middle Districts of Pennsylvania and the Northern District of New York.
- 1982-5 Firearms Training Consultant (self-employed). Firearms instruction for police, security and other armed personnel and civilians; consulting and expert witness services; writing articles for publication in firearms periodicals.
- 1984-5 Director of Security. Jasna Polana, Princeton, NJ. Private estate security, executive protection and protection of valuables in transit. Responsibilities included hiring and training armed security officers, scheduling, design and implementation of operational procedures, supervision, planning of special operations, dealing with vendors of security equipment and services, and interfacing with law enforcement and other public agencies.
- 1979-83 Operative. The Spiesman Agency, New York, NY. Occasional part-time detective work including surveillance, criminal and civil investigations, interviewing of witnesses, process service, and bodyguarding.

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1977-82 Associate; Senior Associate. Friedman & Gass, P.C., 99 Park Avenue, New York, NY. Commercial litigation, including trial and appellate practice in state and federal courts throughout the United States for major domestic corporations. Bar admissions: New York Supreme Court; Federal District Courts for the Southern and Eastern Districts of New York, Western District of Pennsylvania, and District of Utah; U.S. Court of Appeals for the 10th Circuit; U.S. Armed Services Board of Contract Appeals, Washington, D.C.

FIREARMS TRAINING

QUALIFICATIONS: FBI-Certified Firearms Instructor

Instructor, Burlington County (NJ) Police Academy (1986-1995)

Instructor, Allentown (PA) Police Academy (1999-2007)

Technical Editor, The Police Marksman Magazine (1987-1990)

Contributing Editor, Special Weapons and Tactics Magazine (1983-1986)

Editor, The Firearms Instructor (1994-1995)

Editorial Committee, The Firearms Instructor (1988-94, 1996-97, 2001- 2002)

International Association of Law Enforcement Firearms Instructors (IALEFI)

Active Member (1984-); Member, Board of Directors (1987-); Third Vice

President (1991- 2011); Second Vice President (2012-2015); First Vice-

President (2015-)Chairman, Firearms Training Criteria Committee (1995-

2016); Chairman, Corporate Sponsorship Committee (1987-1990); Chairman,

Instructor Certification Committee (1988-1990); Chairman, Safety Committee

(1995- 2003); Member, Safety Committee (2003-); Member, Legal

Committee (1987-1999); Chairman, Legal Committee (1999-); Chairman,

Editorial Committee (1994-1995); Member, Editorial Committee (1988-1994,

1996-1997; 2001-2003); Chairman, Firearms Training Standards Subcommittee

(1992-95); Member, Instructor Criteria Committee (1996-); Member, By-

Laws Committee (1999-2002; 2016-); Member, Ethics Committee (2003-).

Principal Author or Associate Editor of several IALEFI publications – see

below. Originator, IALEFI Handgun Safety Check. Designer, IALEFI Q target

series. Member, Instructor Certification Committee (2010 - 2011). Chairman,

Instructor Criteria Committee (2020 -).

Member, National Advisory Board, Police Marksman Association (1986-2006)

Special Police Officer, Lawrence Twp. Police Department (1986)

Reserve Deputy Sheriff, Cleveland County Sheriff's Office (1988-1991)

Reserve Lieutenant, Albee-Maple Grove Police Department (1989-1990)

Special Deputy Sheriff, Salt Lake County Sheriff's Office (1992-2006)

Special Deputy Sheriff, Berks County (PA) Sheriff's Department (1997-)

Reserve Deputy Sheriff, Greene County (IN) Sheriff's Reserve (June 2008-2012)

Staff Instructor in Pistol, Shotgun, and Rifle at the American Pistol Institute

(Col. Jeff Cooper, Director) (1980-1982)

Senior Affiliate Instructor, Defense Training International (John S. Farnam,

President); DTI Instructor Update (2020)

Instructor, Executive Security International (Aspen, Colorado 1986-1988)

NJ Police Training Commission-Certified Firearms Instructor

Pennsylvania Municipal Police Officers Education & Training Commission -

Certified Instructor (MPI # 1360, General Instruction, Special Instruction -

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Firearms, Application of Force)
NRA-Certified Police Firearms Instructor
NRA-Certified Security Firearms Instructor
NRA-Certified Law Enforcement Rifle Instructor
NRA-Certified Practical Firearms Instructor (Personal Protection)
NRA-Certified Pistol Instructor
NRA- Certified Rifle Instructor
NRA-Certified Shotgun Instructor
NRA-Certified Law Enforcement Submachine Gun Instructor
NRA-Certified Home Firearms Responsibility Instructor
NRA-Certified Police Tactical Firearms Instructor
NRA-Certified Chief Range Safety Officer
NRA-Certified Police Precision Rifle Instructor
H&K-Certified MP-5 User
H&K-Certified MP-5 Instructor
SIG Pistol Armorer
Glock Pistol Armorer
Glock Pistol Armorer Trainer
Mossberg Shotgun Armorer
Mossberg Shotgun Armorer Trainer. Developed and presented armorer training programs for O.F. Mossberg & Sons, Inc. for Models 500, 590 and 590DA shotguns, including consulting on revisions of Armorer's Manual and development of related training materials including student handouts, written and practical examinations, visual aids, etc. Trained other Armorer-Instructors for Mossberg.
Colt Rifle and Submachine Gun Armorer
NLETC-Certified Lindell Handgun Retention Systems Intermediate Trainer
Glock Authorized Transitional Training Consultant. Designed and taught armorers and firearms instructor courses on a contract basis for Glock, Inc. from approximately 1987 through 1993, including development of instructor notebook and related materials, student handouts, written tests, qualification standards, visual aids, etc. (See below for specific course dates and locations.)
Justice System Training Assoc.-Certified Psycho-Motor Skill Design Instructor
Certified Police Defensive Tactics Instructor
Firearms Instructor and Safety Officer, U.S. Treasury Department Pistol Club, New York, NY (1980-83)
"A" Class IPSC Pistol Competitor
Executive Protection Specialist License (State of Colorado)
Certified Agent, Pennsylvania Lethal Weapons Act (Act 235)
Certified ASP Baton Instructor
OCAT-Certified Pepper-Spray Instructor
Certified FATS Instructor Trainer
NTOA - Certified Less Lethal Impact Munitions Instructor
Taser Master Instructor
Light Rifle Expert (NRA Rating)
Smallbore Rifle Expert (NRA Rating)
General Rifle Expert (API Rating)
Pistol Expert (NRA and API Ratings)
Revolver Expert (NRA Rating)

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Handgun Distinguished Expert (NRA Rating)
Shotgun Expert (NRA and API Ratings)
Submachine Gun Expert (NRA Rating)
Federal Firearms Licensee and Class III Licensee
Designer and copyright holder, IALEFI-Q, IALEFI-QP, IALEFI-QR and derivative targets (millions used by numerous law enforcement agencies, and academies nationwide; used worldwide by U.S. Marine Corps Security Detail – U.S. Embassy security; Wyoming Law Enforcement Academy target; Wisconsin DOJ training target; Commonwealth of Massachusetts Training Target, et al.)

Testified regarding firearms before the United States Senate Judiciary Committee (Subcommittee on the Constitution), United States House of Representatives Judiciary Committee (Subcommittee on Crime), New York City Council, New Jersey Assembly Committee on Law and Public Safety, Massachusetts General Assembly Committee on Law and Public Safety, and Florida Legislature Committee on Law and Public Safety, California DOJ

Selected by Citizen Ambassador Program as Delegation Leader for American Law Enforcement Firearms Instructors Exchange Program to China, planned for Spring 1988 (trip did not occur).

Consultant to Sturm, Ruger & Co. regarding law enforcement firearms and development of law enforcement firearms training programs. Presented several demonstrations and familiarization courses with Ruger service pistols at police academies and agencies in Canada, including RCMP Academy, Regina, Canada

Consultant to Springfield Armory regarding development of self-defense handguns for the civilian consumers.

Boy Scouts of America, Merit Badge Counselor for Rifle and Shotgun
New York State IPSC Championships (1979): 5th place overall
Second Chance Competition (Central Lake, Michigan 1983): Shot pump-action shotgun on 3-man team that place high nationally, winning rifles.
National Tactical Invitational, Harrisburg, PA (1992): 7th place overall
National Tactical Invitational, Harrisburg, PA (1993): 4th place overall
IALEFI Stephen House Memorial Match, Reno, NV (1993): 6th place overall
IALEFI Stephen House Memorial Match, Amarillo, TX (1994): 11th place o/a

As a firearms instructor and/or consultant in training and use of force, or as a sworn, armed reserve deputy sheriff or special deputy, have spent many hundreds of hours accompanying police and security officers and/or engaging in patrol and enforcement activities throughout the United States and several foreign countries, in activities including routine patrol, traffic enforcement, armored transport, security of facilities and protection of persons and valuables, vehicular and foot pursuits, K-9 searches, response to crimes in progress, raids and warrant service, arrests, response to shootings and other violent events, arrests at gunpoint, searches of vehicles and persons, response to threatened suicides, alarm response, prisoner transports, road blocks and checkpoints, domestic disturbances, barricaded gunman, mentally ill or emotionally disturbed

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persons, response to vehicle accidents, traffic control, policing public events.

Qualified as expert witness by state courts in Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, Tennessee, Georgia, Florida, Louisiana, Arizona, Wisconsin, Minnesota, Michigan, Ohio, Illinois, Iowa, Mississippi, Kentucky, West Virginia and California, and federal courts in Connecticut, California, New York, New Jersey, Pennsylvania, Tennessee, Florida, Louisiana, Maryland, Illinois, Arkansas, Oregon and Montana; consulted and testified on subjects including firearms, firearms training, safety, use, functioning, operability, maintenance and design; inspection and testing of firearms; holster design and weapon retention; firearms accidents; involuntary muscular contraction and unintentional discharge of firearms; physiological and perceptual/psychological effects of gunfight stress (“adrenalin dump,” “fight or flight syndrome” or “body alarm reaction”) including tunnel vision, auditory exclusion, time distortion, tachypsychia, schema; distinguishing toy guns, airguns and other objects from firearms; firearms-related tactics and police procedures; covering of suspects at gunpoint; defensive tactics; use of force in correctional facilities; training psychomotor skills; gunfight statistics and conditions; written training and use materials, including warnings and user’s manuals; ammunition and ballistics, including bullet trajectories, trajectories through glass; ricochets, bullet penetration and expansion, gunshot wound ballistics, ability of individuals to continue physical activity after being shot; behavior of projectiles upon striking steel and other surfaces, cartridge pressures, cartridge case ejection patterns, muzzle flash, and gunshot noise; reaction time and action vs. reaction; time for suspect to turn his body compared to time required for officer to fire shot (“suspects shot in back”); threat level assessment and justification for use of deadly and non-deadly force; movements, police pursuits and use of force during police pursuits; tactics; arrest procedures; firearms history and development; firearms recoil; firearms toolmarks; non-powder guns; vision, threat assessment and shooting under reduced light conditions; performance of human eye when aiming and firing firearms; concealability of firearms; firing range design, safety and maintenance; paintball and other non-powder guns; ammunition reloading and inspection; home storage of firearms; so-called “Saturday Night Specials;” knife threats; use of “OC” (pepper spray); Taser; speed of firing shots; “21 Foot Rule” and time to cover distances; action vs. reaction, reconstruction of shooting scenes; muzzle to target proximity; powder stippling and other close-range ballistic effects; video evidence, improvised impact weapons, etc.

Clients and parties on behalf of whom cases have been undertaken have included the U.S. Department of Justice, Department of Energy, and Drug Enforcement Administration; Judge Advocate General Corps; Attorney General’s Offices of Pennsylvania, Wyoming, South Dakota, and Louisiana; Atlantic County (NJ) Prosecutor’s Office; Monroe County (PA) District Attorney’s Office; Cumberland County (PA) and Centre County (PA) District Attorney’s Offices; Kenosha County (WI) District Attorney’s Office; State of Georgia (Atlanta Judicial District); Cities of Pittsburgh (PA), Newark (NJ), Bridgeport (CT), Egg Harbor City (NJ); Town of East Haven (CT); Chicago; New York; San Diego (City and County); Jacksonville; Nashville; Milwaukee; Public Defender’s

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Offices of Monroe County, Clarion County and Lycoming County (PA); State's Attorney's Office in Devil's Lake (ND); State of Delaware Public Defender's Office; Delaware Department of Justice; Bianchi International; Safariland, Inc.; Glock, Inc., O. F. Mossberg & Sons, Para-Ordnance Mfg, Inc., SigArms, Inc.; Remington Arms; private attorneys representing defendants in criminal and administrative proceedings, and private attorneys representing plaintiffs and defendants in civil cases.

Advisory Board Member, Firearm Injury Research Project (national research project conducted through FICAP at University of Pennsylvania) 2001-2005
Member, Firearms Section (formerly Firearms Committee), American Society of Law Enforcement Trainers (2000-2003)

Consultant to Pennsylvania Municipal Police Officers Education and Training Commission (pro bono) on development of new firearms and use of force curriculum for use at police academies throughout the state; revision of firearms and use of force curriculum in 2015 after 14 years of statewide use; development of use of force mandatory in-service training program (2015), including pilot program and instructor-training program.

Consultant to Allentown Jewish Community Center on security issues (pro bono, 1998-2000)

Consultant to The Swain School, Allentown, PA, on school security issues (pro bono, 1999-2003)

Consultant to Faith Church, Trexlertown, PA on security issues (pro bono, 2017-) Para-Ordnance Armorer-Trainer and Instructor-Trainer. Under contract with Para-Ordnance Mfg. Co., developed and presented armorer and instructor training programs.

Kimber Pistol Armorer-Trainer and Instructor-Trainer. Under contract with the City of Tacoma, and as authorized by Kimber Mfg. Co., developed and presented law enforcement armorer and instructor training programs, including writing armorer notebook, instructor notebook, and related materials.

Hunter since age 10: varmints and small game (New Jersey, Pennsylvania, Indiana); deer (New York, New Hampshire, Pennsylvania, Alabama, Louisiana, Indiana); pheasant and partridge (Pennsylvania, New Jersey); ducks Louisiana); dove (Pennsylvania); woodcock (Connecticut); wild boar (NH, TX, OH).

Handloader and reloader of ammunition, including bullet casting (1978 -)

Oregon Department of Public Safety Standards & Training – Certified Firearms Instructor (2002)

Commonwealth of Pennsylvania, Municipal Police Officers Education & Training Commission, subject matter expert - member of standing Firearms Committee developing guidelines, policy and standards on firearms issues; member of committee developing state-wide standards for police patrol rifle (2003 -)

Good Shepherd Hospital Charity Sporting Clays Tournament (2002, 2004, 2005)

Consultant to City of Easton regarding Easton Police Department firearms training, policies and procedures, and Easton SWAT Team (2005).

Certified Benelli Shotgun Armorer (2006)

Chairman, Firearms Committee, Berks County Sheriff's Department. Chaired departmental committee hearings, making determinations with regard to intentional and accidental shootings.

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Emanuel Kapelsohn
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Consultant to Lehigh County Municipal Emergency Response Team (“MERT”) regarding use of force policies (2006-2007).

Consultant to California U. of Pennsylvania re. firearms and use of force policy
U.S. Department of Justice: included on list of attorneys selected to provide emergency interim legal representation of federal agents involved in shootings (2000-).

Invited by Chinese government to travel to China to teach police firearms instructors (2010; declined invitation)

“Governor’s Award,” Indiana Police Firearms Training Association (2010)

Recipient, 2012 IALEFI “Charlie Smith Award” (“In recognition of your tireless efforts and unwavering loyalty to the goals, ideals, and members of our organization.”)

Appointed to Advisory Board, Armed Citizens Legal Defense Network (2012)

Consultant to PA MPOETC in revision of police academy curriculum (2014-15), and development of Mandatory In-Service “Use of Force” program taught to 25,000 police officers statewide, including teaching of pilot program and conducting instructor-training program.

FASTER-certified Intervention Specialist (Chris Cerino and Andrew Blubaugh, Instructors, Rittman, Ohio 2018)

Rangemaster-certified Firearms Instructor (Tom Givens, Instructor, Xenia, Ohio 2018)

Advanced Force Science Specialist, Force Science Institute (2018) (see below)

UTM Professional Training Organization (“PTO”) certification

Realistic De-Escalation Instructor, Force Science Institute (2021) (see below)

**TRAINING
COURSES
ATTENDED:**

API Basic Pistol Course (1979): Expert rating; finished second in class

API Special Pistol Course (1980): Expert rating; finished first in class

API Defensive Shotgun Course (1981): Expert rating; finished second in class.

API Rifle Course (1983): Expert rating; finished third in class.

American Small Arms Academy, Submachine gun tutorial, Chuck Taylor (1981)

Police Marksman Association Police Officer Advanced Street Survival Seminar (Instructors Massad Ayoob, Ray Chapman, Jim Morell, et al., 1983): Certif.

Defense Training International, Defensive Handgun/Defensive Submachine Gun (1983): Certificate

Red Cross First Aid Course (1984): Certificate

Red Cross CPR Course (1984): Certificate

Red Cross CPR Course (1991): Certificate

New Jersey Hunter Safety Courses (1966, 1967, 1968): Certificates

NRA Security Firearms Instructor School (FBI Academy, Quantico, VA 1984):

Pistol Expert, Revolver Expert, and Shotgun Expert: Certificates

Law Enforcement Training - Survival 3 Seminar (1984): Certificate

International Police Academy - Morell-Trained Instructors Seminar

(Instructors Jim Morell and John Desmedt, 1984): Certificates of Training in Principles of Control and in Advanced Instructor Training

BSR Counter-Terrorist Driving School (Summit Point Raceway, West Virginia, 1984): Certificate

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International Police Academy - Defensive Tactics Instructor Level 1
(Sampson Technical College, Clinton, NC 1984): Certificate
FBI Firearms Instructors Course (Burlington County Police Academy, 1985):
Certificate
International Police Academy - Master Instructors Seminar (Instructors Morell,
Desmedt, et al., 1985): Certificate and Guest Instructor Award
1984 National Training Conference, International Association of Law
Enforcement Firearms Instructors (Nashville, TN): Certificate
91st Annual Conference, International Association of Chiefs of Police
(Salt Lake City, UT 1984)
LAPD Ordnance Exposition (Los Angeles 1984): Seminars on Handgun
Survival; Firearms Evidence; Officer-Involved Shooting Incidents: Certificates
ESI Advanced Executive Protection Program (Aspen, CO 1985): Certificate
and State of Colorado Executive Protection Specialist License
1985 National Training Conference, International Association of Law
Enforcement Firearms Instructors (Philadelphia, Police Academy): Certificate.
Presented instructor-level class on close-range shooting techniques
U.S. Marshal Service Automatic Weapons and Officer Survival Course
(North Carolina 1985): Certificate
Tactical Response Association Ordnance Exposition (Las Vegas, 1986):
Attended seminars on Rapelling SAS Method, Shooting Simulation Response
Course, Satanic Cults and Crimes, Terrorism Perspective 1986, and
International Terrorism Symposium: Certificates
NRA Law Enforcement Rifle Instructor School (U.S. Marine Base, Quantico,
VA 1986): Scored 99.33% on firing test: Certificate
1986 National Training Conference, International Association of Law
Enforcement Firearms Instructors (Orlando, FL): Certificate. Presented
instructor-level classes on Dim-Light Handgun Shooting; Police Shotgun
International Police Academy - Straight Baton Class (Instructor Jim Morell,
Allentown, PA 1986): Certificate
Department of Defense Tactical Team Training Seminar (ARDEC, 1986):
Certificate
Calibre Press Street Survival Seminar (Atlantic City, NJ 1986): Certificate
Tactical Response Association World Conference on Terrorism (Washington,
D.C. 1987): Attended seminars on GSG 9 Tactics, Hostage Negotiation, and
Making of SWAT Teams: Certificate
Glock Armorer's Course (Beltsville, MD 1987): Certificate
Ordnance Expo '87 (Chicago, IL): Attended seminars on Vicarious Liability
for Law Enforcement/Psychological Screening of Officers; Indoor and Outdoor
Range Design; Tactical Load-Bearing Vests for Special Operations; and
Revolvers vs Semi-automatic Pistols
NLETC Lindell Handgun Retention System Course (1987): Intermediate
Trainer Certification
1987 National Training Conference, International Association of Law
Enforcement Firearms Instructors (Mesa, AZ): Certificate. Presented
instructor-level classes on tactical use of cover.
NRA Law Enforcement Semi-Automatic Pistol Seminar (U.S. Marine Base,
Quantico, VA 1987). Attended and served as Chief Instructor for this course.

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NRA National Instructors Conference (Orlando, FL 1988): Attended sessions on NRA Personal Protection Course and on Modern Rifle Training Techniques Tactical Operations Seminar (Law Enforcement Defensive Systems. New Jersey 1988. Instructor Robert J. O'Brien): Certificate

AAI Corporation Law Enforcement Chemical Munitions Training Program (New Jersey 1988): Certificate

Factory Tours and Visits: Colt Firearms (Hartford, CT); Smith & Wesson (Springfield, MA); Mossberg (North Haven, CT); U.S. Repeating Arms Co. (New Haven, CT); Sturm Ruger & Co. (New Hampshire and Prescott, AZ); Winchester (East Alton, IL); Swartklip Munitions (South Africa); Glock Gesmbh. (Austria); AV Technologies (Michigan); Second Chance Body Armor (Michigan); Para-Ordnance (Toronto); Keystone Sporting Arms (Milton, PA); Kimber Mfg. Co. (New York); Mossberg/Maverick Arms (Eagle Pass, TX); Glock, Inc. (Smyrna, GA 1989, 2014 and subsequent); Gould & Goodrich Holsters (Lillington, NC) 2017.

SHOT Shows and NRA Annual Shows: attended various years 1984-2016 et seq.

Museums visited (arms and armor collections) include Winchester Gun Museum (New Haven, CT), Museum of the Confederacy (Richmond, VA), Arms and Armor Museum (Kutztown, PA), Metropolitan Museum Arms and Armor Collection (New York, NY), National Firearms Museum (Fairfax, VA), U.S. Marine Corps Museum (Quantico, VA 1987), West Point Museum (West Point, NY), Pennsylvania State Police Weapons Collection (Hershey, PA), U.S. Army Ordnance Museum (Aberdeen Proving Grounds, MD), Texas Rangers Museum (San Antonio, TX), and private tour of Division Balistique, Laboratoire de Police Scientifique at Police Headquarters, Paris, France (ballistics laboratory and weapons collection); National Museum of the Marine Corps (Quantico, VA 2008).

Visit to G.I.G.N. Headquarters to observe firearms training and facilities (French Gendarmerie Counter-terrorist and Hostage Rescue Team), Versailles, France (2008)

SIGARMS Law Enforcement Firearms Familiarization Course (October 1988): Certificate

1988 National Training Conference, International Association of Law Enforcement Firearms Instructors (St. Augustine, Florida): Certificate. Presented instructor-level class on dim-light assault rifle and shotgun techniques; moderated panel discussion on semi-auto pistol transition training. Second International Training Seminar, American Society of Law Enforcement Trainers (Kansas City, Missouri 1989): Certificate. Presented instructor-level classes on draw and close-range handgun techniques; attended classes on training female officers, straight baton techniques, maximization of revolver skills, and teaching psychomotor skills

Wound Ballistics Seminar (Instructors Dr. Martin L. Fackler, M.D., et al.) Phoenix, Arizona 1989): Certificate

1989 National Training Conference, International Association of Law Enforcement Firearms Instructors (Salt Lake City, Utah): Certificate. Presented instructor-level class on dim-light assault rifle/shotgun techniques

NRA Law Enforcement Submachine Gun Instructor Development School (Burlington County NJ Police Academy 1989): Certificate

H&K MP-5 Submachine Gun Course (Sterling, VA 1989): Certificate

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H&K MP-5 Instructor Course (Sterling, VA 1989): Certificate
SIG Pistol Armorer's School (Richmond, VA 1990): Certificate
1990 Annual Training Conference, International Association of Law
Enforcement Firearms Instructors (Washington, D.C.): Certificate. Attended
courses on range control, use of cover, and shotgun. Presented instructor-level
classes on concealed carry handgun, auto-pistol transitional training, and dim-
light handgun and shotgun; participated in panel discussion of police handgun
caliber selection and effectiveness
IALEFI Regional Training Conference (Dutchess County, NY 1991): Presented
classes on cover mode and involuntary discharge; advanced shotgun
techniques. Attended classes on use of lethal force (Lt. James Garside) and
advanced auto-pistol techniques (S&W Academy Staff)
1991 Annual Training Conference, Internat'l Association of Law Enforcement
Firearms Instructors (Mesa, AZ): Certificate. Attended courses on concealed
carry, range training vs. real world, utilization of steel targets, Berkeley
shooting incident, wound ballistics (Fackler), perception vs. reality in use of
lethal force (Garside), and handgun inspection. Courses taught: see below
Police Long Rifle Certification Course, International Association of Chiefs
of Police (Ft. Dix, NJ 1991)
American Society of Law Enforcement Trainers Fifth International Training
Seminar (Milwaukee 1992): Certificate. Attended courses on wound
ballistics (Marshall), dealing with the hostile learner, principles of adult
learning. Courses taught: see below
IALEFI Regional Training Conference (Dutchess County, NY 1992): Attended
classes on bullet performance (Ayoob), semi-automatic police shotgun (Felter),
and tactical handgun (Hackathorn): Certificate. Courses taught: see below
IALEFI Regional Training Conference (Long Island, NY 1992): Attended
class on counter-sniper rifle: Certificate. Courses taught: see below
Ken Hackathorn Tactical Firearms Course (Pottsville, PA 1992) for handgun,
shotgun, and submachine gun: Certificate
1992 IALEFI Annual Training Conference (Tampa, FL): Certificate. Attended
courses on tactical handgun (Halleck/Odle); Close Quarters Firearms Control
Tactics (Klugiewicz); Reaction vs. Precision Shooting (Rogers); Tactical
Planning Principles/Cover Utilization (Casavant). Courses taught: see below
Police Counter-Sniper Rifle Course, Instructor Group, U.S. Army Marksmanship
Training Unit (Ft. Benning, GA 1992): Certificate
Real Life Personal Security Program (Dale Yeager, Instr. Pottstown, PA 1993)
1993 IALEFI Annual Training Conference (Reno, NV): Certificate. Attended
courses on Tactical Handgun (Campbell), Planning for Critical Incidents
(Cassavant), Gunfight Dynamics (Repass, et al.). Courses taught: see below
IALEFI Regional Training Conference (Nassau County, NY 1993): Certificate.
Attended classes on use of force continuum and perception (Garside);
realistic knife defense. Courses taught: see below.
Aerosol Chemical Restraint User Class (Wernersville Police Department, 1993):
Certificate
1994 IALEFI Annual Training Conference, Orlando, FL: Certificate. Attended
courses on Dynamic Teaching Techniques (R. Lindsey); Defensive Tactics
for Women (Sgt. Pam Miller). Coordinated safety for all training events.
Courses taught: see below

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Search & Rescue Tracking, Ashmore Enterprises (CT (1994): Certificate
Management of Workplace Violence, ASIS, Reading, PA (1994).
CPR and Emergency Cardiac Care Provider course, American Heart
Association, and Oxygen Therapy Emergency Response Training, SOS
Technologies (OTI authorized) (1995, recert. 1996, 1999)
Colt Armorer Course (Ct. 1995): Certificate
LFI-1: Judicious Use of Deadly Force (Lethal Force Institute, Massad
Ayoob, Instr. 1995): Certificate
1995 IALEFI ATC, Amarillo, TX: Certificate. Attended course on Law
Enforcement Officers Flying Armed (FAA approved course: Certificate)
OCAT Oleoresin Capsicum Aerosol Instructor Training, Harrisburg Area
Community College (1996): Certificate
Concealed Carry Handgun Course, Arizona Law Enforcement Firearms Instr.
Annual Training Conference, Mesa, AZ (1996): Mark Fricke, Instructor
NRA Law Enforcement Tactical Firearms Instructor School, U.S. Marine Base,
Quantico, VA (1996): Certificate
Urban Rifle Course, Thunder Ranch, TX (Clint Smith, Instr. 1996): Certificate
1996 IALEFI ATC, Mesa, AZ: Certificate. Attended courses on Weapon
Defense (Klugiewicz); Officer Survival (FBI). Coordinated safety for all
events. Courses taught: see below
Defensive Tactics/Personal Weapons Course, Paradigm Training (1997):
Certificate
FATS Instructor-Trainer Certification Course (MPOETC, Harrisburg, PA
1997): Certificate
1997 IALEFI ATC, Columbia, Missouri: Certificate. Attended courses on
Protective Detail Training (Wilt); Sharpening the Warrior's Edge
(Bruce Siddle); Use of the Handgun In A Hostile Environment
(Spaulding); and The Bulletproof Mind (Lt. Col. Dave Grossman).
Coordinated safety for all events. Courses taught: see below
NTOA Tactical Technologies Expo (Philadelphia, 1998): Attended courses
on Domestic Terrorism, Less Lethal Projectiles, and U.S. Military's
Warfighting Laboratory Project. Certificate
Security for Overseas Travel. Vance International, Reading, PA, 1998
NTOA Less Lethal Impact Munitions Instructor Course, Bucks County
Police Academy (1998): Certificate
Oleoresin Capsicum Aerosol User's Course, Paradigm Consulting Corp.
(1998): Certificate
Monadnock Expandable/Straight Baton Advanced Course (Tim Lynch,
Instr.) 1998: Certificate
1998 IALEFI ATC, West Palm Beach, FL: Certificate. Attended courses on
Training Injuries and Deaths (Kat Kelly/Robert Bragg); Confined Space
Weapons Engagement (Slowik); The Bulletproof Mind (Lt. Col. D. Grossman)
Taser Master Instructor Course (Instructor Rick Smith. VA, 1999): Certificate
IALEFI RTC, Philadelphia Police Academy, PA (1999): Certificate. Attended
courses on Patrol Rifle Course Design; Practical Shotgun Skills; and Dim Light
Training Techniques
Pennsylvania Hunter Safety Course (1999): Certificate
1999 IALEFI ATC, Phoenix, AZ: Certificate. Attended courses on Innovative
Training on a Limited Budget; Mental Preparation for Armed Confrontations

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(Croty); Edged Weapons (Lynn Thompson); Instructor Development (Wilt); and Recreation of Officer-Involved Shootings (Westrick)

2000 ASLET International Training Seminar, Richmond, VA: Certificate. Attended courses on Patrol Rifle Training Programs; Building Search (contin.) Tactics; Use of Deadly Force; Maximizing Time & Budget in Firearms Training; Post-Shooting Procedures (Grassi); Backup & Contact/Cover Principles; Firearm Retention & Disarming (Demetriou); Advanced Firearms Instructor Training (FBI Training Cadre); Training Female Shooters; Protocol for Major Use of Force Investigations (Michael Stone, Esq.); Point Shooting (Lovette). Trained on use of force simulators (FATS, Caswell AIS, American Laser Technologies)

IALEFI RTC, Philadelphia Police Academy (2000): attended courses on Response to Active Shooters in Schools (L. Glick); Dim-Light Shotgun Skills (Boyle). Courses taught: see below

Gunshot Wounds Seminar, Reading, PA 2000. J. Holliman, M.D., Instructor

2000 IALEFI ATC, Tampa, FL: Certificate. Attended courses on Urban Rifle (Farnam), Ultimate Shotgun (Hoffner), Point Shooting (Chiodo and Lovette), and Bulletproof Mind (Grossman). Coordinated safety for all events. Courses taught: see below.

Patrol Response to Active Shooters in Schools and Public Buildings, NTOA (Exeter Twp. Police Dept., PA, April 2001, L. Glick, Instructor): Certificate.

NRA Police Precision Rifle Instructor Development School. The Crucible, Fredericksburg, VA (2001): certificate of successful completion

2001 IALEFI ATC, Reno, NV: Certificate. Attended courses on Gender-Based Learning Differences (V. Farnam), Simulation Training and Munitions (Klugiewicz). Assistant Safety Coordinator for all events. Courses taught: see below.

Glock Armorer Course (Recertification): Wind Gap, PA (2002): Certificate

GAU/17 7.62mm NATO ("GE Mini-Gun") Training, Patrick Air Force Base, Melbourne, Florida (2002)

GAU/17 7.62 mm NATO Training, Crane Naval Surface Warfare Center, (Crane Air Force Base) Indiana (2002)

2002 IALEFI ATC, San Diego, CA: Certificate. Attended course on Dim-Light Survival Techniques (Ken Good, Instructor). Chief safety coordinator for all events. Course taught: see below.

2003 IALEFI ATC, Orlando, FL: Certificate. Attended courses on Advanced Tactical Rifle Techniques, Shoothouse Instructor Development, Rapid Response to Active Shooters, Vehicle Stop Response Tactics, Stress Analysis Shooting Situations, Mental Conditioning and Mindset (Capt. Joe Robinson), and Blackhawk Down Lecture (Col. Danny McKnight). Attended trade show and hands-on weapons demonstrations.

Price's American Kenpo Karate Center. Leesport, PA. Student in Kenpo Karate (2003-2004)

Threat Analysis Seminar, Reading, PA (2003): Certificate. Instructor Richard L. Ault, Ph.D., Academy Group, Inc., former SA, FBI Behavioral Science Unit

Warrior Arts Seminar (Stick and Knife Fighting). Al McLuckie, Instructor. Leesport, PA (2004).

ATF Dim Light Firearms Training. Los Angeles Police Academy. (2004)

Taser Master Instructor Recertif. Course. Fogelsville, PA (2004). Certificate

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2004 IALEFI ATC, Dayton, Ohio. Certificate. Attended classes on Performance Under Stress (Ernest Langdon), Use of Laser Sighting Devices (Hackathorn), Pistol Skills (D. Carroll), and presentation on training principles (CSM Eric Haney). Assisted with Handgun Safety Check. Course taught: see below.

Berks County Sheriff's Department, semi-annual training and qualification sessions with handgun, shotgun and/or patrol rifle (1997-2004)

Disaster Planning: Meridian Bank Fire. ASIS Lehigh Valley Chapter. (2005)

SHOT Show (Las Vegas, 2005). Attended industry trade show.

2005 IALEFI ATC, Reno, Nevada. Certificate. Attended classes on Officer Involved Shooting (Marcus Young); Research on Firearms Ejection Patterns, Reaction Time, Perceptual Distortions Under Stress, and Other Physio-Psychological Gunfight Reactions (Dr. Wm. Lewinsky); The Winning Mind (Brian Willis); Innovative Low-Light Training; Finishing the Fight (Jeff Hall); Use of Force Options & Policy (Jon Blum); Close-Range Point Shooting (Matt Tempkin); Application of Marksmanship; Training at the Speed of Life (Ken Murray). Course taught: see below.

Repetitive Strain Injuries (Somerset, NJ 2005)

Use of Force in Pennsylvania (Philadelphia 2006). 6 CLE credit hrs. Certificate

SHOT Show (Las Vegas, 2006). Attended industry trade show.

2006 IALEFI ATC, West Palm Beach, FL. Certificate. Attended classes on Patrol Rifle, Survival Vision; Handgun Light Instructor, Cops on the 4th Generation Warfare Battleground (DuVernay); Concealed Carry; Managing Use of Force Training (Albert Lee); Mindsighting (Dr. Michael Asken).

Benelli Shotgun Armorer's Course (West Paterson (NJ) Police Department 2006)

BATF Training Classes, "Characteristics of Armed Suspects," "Firearms Identification," and "ATF Firearms Trace Program." Alvernia College (2007)

SHOT Show (Orlando, FL 2007). Attended industry trade show.

Mastering the Defensive Folding Knife. Northeastern Tactical Schools. Michael de Bethencourt, Instructor. (Hellertown, PA 2007) Certificate.

Firearm Retention, Disarming and Recovery. Northeastern Tactical Schools. Michael de Bethencourt, Instructor. (Hellertown, PA 2007) Certificate.

CDT Personal Protection Training. (Reading, PA 2007) Level 1 Certificate.

2007 IALEFI ATC, San Antonio, TX. Certificate. Attended classes on Tactical Anatomy (James Williams, MD), Patrol Rifle (D. Alwes), Close Quarters Handgun Techniques (H. Iverson), Hojutsu-Ryu (J. Hall), Handgun Light Instructor, Virtual Reality Training (Livefire Interactive), Legal Standard – Objective Reasonableness (T. Harper, Esq.).

Seminar, "Police Involved Shootings – When the Smoke Clears." Westchester County Detectives Association (Yorktown Heights, NY 2007). Instructors Michael Baden, MD (Chief Forensic Pathologist, NYSP), Thomas Martin (Sr. Investigator, Forensic Ident. Unit, NYSP), ADA Michael Hughes (Public Integrity Bureau, Westchester DA's Office), Det. Michael Palladino, and Emanuel Kapelsohn (see below). Certificate

SHOT Show (Las Vegas, 2008). Attended industry trade show. Attended seminar on proper firearms retailing procedures to comply with legal and regulatory requirements, and seminar on advances in, testing and selection of OC aerosol devices.

2008 IALEFI ATC, Reno, NV. Certificate. Attended classes on Combat Mindset, Response to Active Shooters (rifle and handgun), One-Shot

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Qualifications, Treatment of Medical Emergencies for Firearms Instructors, Mental Preparation. Competed in Memorial Match. Classes taught-see below. Indiana Pre-Basic Law Enf. Officers Course. 2008. Successfully completed. Indiana Basic Firearms Course. Greene County Sheriff's Department (2008). Qualified with SIG P229 handgun (expert rating) and Remington 870 shotgun. Indiana Basic Defensive Tactics Course. Greene County Sheriff's Department (2008). Successfully completed. Response to Active Shooters. Greene County, IN (2008). Presented by Crane Naval Surface Warfare Center. Successfully completed. Shooting Scene Reconstruction Course, Eugene (OR) Police Department, 2008. Mike Haag, Instructor. Certificate
2009 Conference, International Law Enforcement Educators & Trainers Association ("ILEETA"), Chicago, IL. Attended courses: New Paradigms in Firearms Training (Conti), Human Factors and Stress in Lethal Confrontations (Darrell Ross, Ph.D., et al.), Active Shooter Update (Alwes), Taser Training Overview/Update, Tracking Down Valid Firearms Training (G. Morrison, Ph.D.), plus trade show and handgun competition. Taught course on use of force policy (see below).
2009 IALEFI ATC, West Palm Beach, FL. Certificate. Attended industry trade show; shot in IALEFI Memorial Match. Attended lectures and classes: Von Maur Shooting; Firearms Training for Active Shooter Response; Law Enforcement Legal Liability; Tactical Response to Lethal Threats (Allen & G. Lee); Teaching Female Shooters; A Collaborative Approach (L. Hamblin, C. Schroeder, et al.); Teaching Female Shooters; Expert Witness Preparation for the Firearms Instructor; Benefits and Risks of Verbalization in Deadly Force Encounters (G. Klugiewicz). Course taught: see below. Tactical Treatment of Gunshot Wounds. Anthony M. Barrera, M.D. (Lebanon, IN 2009. Certificate.)
Active Shooter Response. Greene County, IN (2009). Presented by personnel from Crane NSWC.
Force Science Certification Course. Milwaukee County Sheriff's Office, Milwaukee, WI. Force Science Institute. Dr. Bill Lewinski, Dr. Anthony Pinizzotto, Dr. Joan Vickers, Dr. Ed Geiselman, Dr. Alexis Artwohl, Dr. Richard Schmidt, Dr. Matthew Sztajnkrzyer (2009. Certificate.)
2010 Conference, International Law Enforcement Educators & Trainers Association ("ILEETA"), Chicago, IL. Attended courses: Handgun Retention and Disarm Instructor (certificate); Characteristics of Exceptional Trainers; Critical Combative Concepts; Smart Use of Force; Heroic Cynicism – How to Live Life in the Arena (Van Brocklin); Stress in Law Enforcement (Artwohl); In Pursuit of Personal Excellence (Brian Willis); Warriors, Force and Winning (certificate). Attended law enforcement products trade show. "The Bulletproof Mind," Lt. Col. Dave Grossman. Boone County Sheriff's Department (2010)
2010 IALEFI Annual Training Conference, San Antonio, TX. Attended law enforcement products trade show. Conducted Handgun Safety Check for 120 first-time attendees. Attended courses: Begged, Borrowed, Stolen; So You're Qualified – Now What?; Off-Duty Weapons (M. Boyle); Excited Delirium; Diagnosing Shooters (A. Stallman). Course taught: see below. Certificate. Indiana Hunter Education/Hunter Safety Course (2010). Passed, issued card.

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Police Defensive Tactics Refresher (2011). Greene County Sheriff's Department
Emergency Vehicle Operations Course (2011). Greene County Sheriff's Dept.
2012 SHOT Show, Las Vegas, NV. Attended trade show, and courses on Low
Light Equipment and Techniques (Instructor J. Meyer) and "Train the Trainer,
Below 100," (Instructors Dale Stockton, et al.)
Terminal Ballistics & Field Trauma Care, Greene County Sheriff's Dept. (2012)
2012 ILEETA Conference, Chicago, IL. Attended courses: Law
Enforcement/Media Relations; Taser Training & Updates; Range Emergencies;
Advanced Firearms Training on a Limited Budget; Police Use of Force Training
& Preparation (Chudwin); Deadly Force Training Performance & Officer
Safety; Designing Stress-Exposure Training; Swarming, Flash Mobs & the
OODA Loop; Verbal Defense & Influence ("Verbal Judo") (Klugiewicz);
Street-Level Counter-Terrorism; Use of Force Accountability (Brave); Positive
Relations – Law Enforcement & Armed Citizens; Deadly Force Panel of
Experts (panelist). Also attended industry trade show.
2012 IALEFI Annual Training Conference, Nashville, TN. Attended courses:
Arrest and Control Tactics (Beckley); Simple Martial Art for Self-Defense
(Albert Lee); Patrol Rifle Basics; Sports Physiology Approach to Firearms
Training; Filling the Tank; Warriors & Leaders; Great American Gunfights.
Instructed: Firearms Instructor as Expert Witness. Also, attended industry
trade show and hands-on firearms demonstrations.
2013 IALEFI Annual Training Conference, Mobile, AL. Attended courses:
Confined Space Engagement (Farren); Vision-Based Shooting (Stimmell). Also
attended industry trade show. Courses taught: see below.
Glock Armorer's Course, Old Bridge, NJ (2013).
Knife Defense/Knife Fighting Seminar, Hank Hayes, Instructor. No Lie Blades.
Allentown, PA (2013) (class audited only, due to injury)
2014 SHOT Show, Las Vegas, NV. Attended industry trade show.
2014 ILEETA Conference, Lombard, IL. Attended courses: Shots Fired,
Suspect Down (John Bostain); Critical Combative Concepts (Charles Humes);
Force Related Policies & Issues (Mike Brave); Critical Look at Firearms
Qualifications (David McGaha); Police Use of Force Tactics and Law
(Chudwin); Gunman in the Lobby, Officer Down (Joe Ferreira); Verbalization
Skills (Klugiewicz); Path to Self-Discovery (Bob Lindsey); Street Officer
Medical Tactics (Eric Dickinson); Embrace the Suck- Winning Strategies
For Trainers (Brian Willis); "Heroes Behind the Badge"; Deadly Force
Expert Panel (Ayoob, et al.); Choose Your Words Wisely (Joanne Ryan and
Thomas McGreal); Coaching Mental Toughness (Quinn Cunningham);
Sharpening the Winning Edge (Brian McKenna); Interactive Firearms Training
(Lt. Dan Marcou). Course taught: See below.
2014 IALEFI Annual Training Conference, Amarillo, TX. Attended courses:
Surviving the First Three Seconds (Tpr. Hensley); Extended Range Off-Duty
Handgun Operation (Michael Johnson); Vision-Based Shooting (Jim Stimmell);
Identifying the Limits of Firefight Performance; Threat Pattern Recognition
Firearms Training System (Bruce Siddle, Human Factor Research Group)
Classes Taught: see below.
NRA Personal Protection Outside the Home (2014): certificate
2015 SHOT Show, Las Vegas, NV. Attended industry trade show.
Glock factory tour and armorer-trainer update. Smyrna, GA (2015)

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Winning Mind Seminar, Dave Smith, Instr. ,PA State Police Academy (2015)
2015 ILEETA Conference, Wheeling, IL. Attended courses: Deadly Force Panel of Experts (panelist, see below); Creating Training Miracles; Understanding Response Time in Law Enforcement; Emergency Preparedness for Law Enforcement Families; Ambush – Preparing Officers for the #1 Killer; Defensive Knife (Halleck); Down to Zero – Unintentional Discharges in Law Enforcement; Becoming Knights – Teaching Warrior Mindset; Mistake of Fact Shootings (Santos); Use of Force Report Writing; Active Shooter Panel Discussion (panelist, see below); Use of Force and Liability; Blended Learning; Lifesaving Made Easy; Think Like a Soldier, Act Like a Cop
2015 IALEFI Annual Training Conference, West Palm Beach, FL. Attended courses: Lecture on Leadership (Col. Danny McKnight); Current Issues for Firearms Instructors (Alwes); Developing Courses of Fire (Marrs); Contaminated Combat (Liske, audited only); Reflex Sights (Martello); Close Quarter Transitions (Jeff Prather).
Gun Law Seminar, U.S. Law Shield, Allentown, PA (2015)
Tavor Level 1 Armorer’s Course, including 9mm Conversion and Right/Left Hand Conversion. Harrisburg Area Community College. Certificate (2015).
FN15 Armorer Course, Berks County Prison, Leesport, PA (2015). Certificate.
IALEFI Regional Training Conference, Freeport Police Range, Long Island, NY (2015). Certificate. Attended classes on Use of Force (Chief James Garside), Lateral Vascular Neck Restraint (Thomas Graham); and Master Pistol Instructor Skill Builder Class (Steve Gilcreast, Sig Sauer Academy).. Class taught: see below.
2016 ILEETA Conference, Rosemont, IL. Attended courses: Deadly Force Panel of Experts (panelist, see below); Active Shooter Panel Discussion; Use of Force Panel Discussion; How to Survive and Win In An Ambush (Shaykhet); Lights, Sights & Lasers (Wes Doss); Patrol Rifle (John Farnam); Responding to the Officer-Involved Shooting (Burke, IMPD); Human Factors in Training and Performance (John Bennett); Video Evidence (NV DPS); Guardians are Warriors (Mahoney); Body Searches (Cpl. Julie Johnson); Black Lives Matter (Ron Martinelli); Lessons From the Great Law Dogs in History (Lt. Dan Marcou).
Video Evidence Class, Force Science Institute, Chicago, IL (2016, Certificate)
2016 IALEFI Annual Training Conference, Mobile, AL. Attended Courses: Surviving the First Three Seconds (Tpr. Robert Robertson, NC Highway Patrol); Active Shooter Training in the Shoothouse (Alwes); Handgun Snatching (Albert Lee/Wilkie); ALERT Training - Civilian Response to Active Shooter Events (Instructor Certificate). Course taught: see below.
Hojutsu-Ryu Class, Phillipsburg NJ and Easton PA, taught by Soke Jeff Hall. Awarded brown belt (2016).
Colt .45/Model “O” (1911) Armorer Class, Colt’s Manufacturing Company, Ohio Peace Officers Training Academy, London, Ohio (2016). Certificate
2017 SHOT Show, Las Vegas, NV. Attended industry trade show.
Improving Tactical Performance by Enhancing Vision, SHOT Show Law Enforcement Education Program, Dr. Alan Reichow (2017)
Rangemaster Tactical Conference, Little Rock, AR (2017). Attended classes: Between a Harsh Word and a Gun (OC, Chuck Haggard); Church Security (Moses); Police-Citizen Contacts (Weems); Gun Accidents (J. Farnam); Just

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Enough Jitsu (Cecil Burch); Defining the Threat (T. Givens); Law of Self-Defense (A. Branca); The Firearms Instructor as Expert Witness (Ayoob/Hayes); Street Encounter Skills (Murphy).

2017 ILEETA Conference, St. Louis, MO. Attended courses: Deadly Force Panel of Experts (panelist, see below); Patrol Rifle Panel (panelist, see below); Tactical Duty Knife (Fletcher Fuller); Six Myths of Motor Learning & How This Affects Your Training (Robert Bragg); Proxemics-Based Curriculum Development (Marie D'Amico); Facilitated After-Action Reviews (Joseph Willis); Camera-Friendly Compliance & Control Techniques That Work (Hetrick); "After Force Experience Beyond the Incident (Patrick Shaver); Pre-Indicators of An Assault (Mark Sawa).

2017 IALEFI Annual Training Conference, West Palm Beach, FL. Attended courses: The Pulse Nightclub Shooting; In-Extremis Advanced Tactical Handgun (Wes Dobbs); Police Shotgun (Mike Johnson); Officer Survival Mindset (Alex and Daniel Cobb); Bulletproof Mind (Lt. Col. Dave Grossman). Also attended industry trade show and hands-on product demonstrations.

2018 SHOT Show, Las Vegas, NV. Attended industry trade show, including Industry Day at the Range.

2018 ILEETA Annual Conference, St. Louis, MO. Attended trade show, and courses: Active Shooter Panel (panelist); Deadly Force Expert Panel (panelist); A Nearly Fatal Range Shooting (DuVernay); Recognizing & Responding to Mental Illness; Terminal Ballistics (Ed Santos); Threat Pattern Recognition (Joe Ferrera).

2018 IALEFI Annual Training Conference, Houston, TX. Attended trade show, and courses: Aurora, Colorado Theater Shooting; Basic Patrol Rifle Fundamentals (Pickering and French); Low Light Operations (J. Meyer); IADLEST National Certification Program; Reactive v. Precision Shooting (T. Fletcher); Officer Survival Mindset (Cobb); Dallas Sniper Incident & Mexican Drug Cartels (ATF).

FASTER Course, Rittman, OH. Chris Cerino & Andrew Blubaugh, Instrs. (2018)

Rangemaster Firearms Instructor Development & Certification Course, Xenia, Ohio, Tom Givens, Chief Instructor (2018)

Force Science Advanced Specialist Course, Force Science Institute, April-August 2018. Course syllabus included required reading in three textbooks (on human movement, physical training and performance and reaction time; vision; and human error) and dozens of scholarly articles and research papers, lectures by several noted authors, doctors, scientists and professors; multiple oral and written presentations; teleconference and in-person classes; and formal written work, comprising in total several hundred hours of coursework at the graduate school level.

2019 SHOT Show, Las Vegas, NV. Attended industry trade show, including Industry Day at the Range.

"Police Misconduct" Continuing Legal Education Program (2/11/2019).

2019 NRA Convention, Indianapolis, IN. Attended industry trade show.

2019 IALEFI Annual Training Conference, West Palm Beach, FL: Attended classes and presentations by Dr. William Lewinski ("Force Science Update"), Don Alwes ("Active Shooter Response For Firearms Instructors"); Don Smith ("Sniper Overwatch"); LouAnn Hamblin ("Active Shooter Handgun Training"). Also attended industry trade show, helped conduct Handgun Safety Check, and

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helped conduct Memorial Match. Class taught: see below.
“Preparing for an Armed Intruder,” Eastern University, St. Davids, PA (2019)
American Heart Association “Heartsaver First Aid CPR AED” Training
Certification 12/8/2019
2020 SHOT Show, Las Vegas, NV. Attended industry trade show.
Active Shooter Response, Trexlertown, PA, March 2020. Thanos Milios, Lead
Instructor. Classroom and reality-based training scenarios using Simunitions
guns with role-players.
“Safely Engaging Psychopaths & Sociopaths,” Public Agency Training Council
Webinar, April 2020.
“Police Response to Armed Suicidal Subjects,” Dr. Andrew T. Young, Instructor,
Public Agency Training Council - Webinar, June 23, 2020
Defensive Handgun 1, 2, 3 & 4, Marksmanship Matters (Larry Mudgett
Instructor), Lehi, Utah, July 2020
Defensive Handgun and Patrol Rifle, Defense Training International, John
Farnam, Instructor. Sussex, NJ, October 2020.
Certificate, DTI Urban Rifle. Certificate, DTI
Instructor Update. (Assisted in instructing, see below.)
UTM Professional Training Organization (“PTO”) Certification Class.
Certificate (2020)
Glock Armorer’s Course – Update and Recertification (Smyrna, GA 2020)
IALEFI Virtual Training Conference, January 2021.
Metal-Tec Metal Detector Instructor Course. Certification 2021.
Principles of De-Escalation, Pennsylvania State Police (Sgt. Timothy Fetzer, Jan.
2021)
Realistic De-Escalation Instructor Course, Force Science Institute, Maplewood,
Minnesota. IADLEST-Certified Course, Certificate (2021)
“Officer-Involved Shootings: The Aftermath” (“I’ve Been In An Officer
Involved Shooting – Now What?”) Instructor Laura Scarry, Esq. Webinar 2021
(Certificate)
Stop the Bleed Training, St. Luke’s Hospital, Easton, PA 2021 (Certificate)
ILEETA Annual Training Conference, St. Louis, MO (2021). The Neuroscience
of De-Escalation (Verplanck and Smarro, Instructors); Tactical Disadvantages
(Green); Risk Assessment (Horine); Small Unit Tactics for Active Shooter
Response (Scott Hyderkamp); Sharpening Your Agency’s Knife Program (Zane
Nickell); Surviving the Officer-Involved Shooting (Brian Gonzales); Robert
Peel’s Principles (Casavant); How to Use Personality Science to Enhance
Training (Kerry Mensior); What Excited Delirium is Not (Ellis Amdur);
Simulator Scenarios: Virtra, Milo, Ti Systems; Active Shooter Panel of
Experts (panelist and attendee); Deadly Force Panel of Experts (panelist
and attendee). Courses taught: see below.
Defensive Cane Course (“Introduction to Cane-Fu”), Powhatan, Virginia, Tom
Ashmore, Instructor. 2021 (Certificate)
IALEFI Annual Training Conference, Melbourne, FL. 2021 (Certificate)
“Legal Issues in Use of Force,” LLRMI (Legal & Liability Risk Management
Institute). Instructor: Jack Ryan, Esq. (2022)
IALEFI Annual Training Conference, Las Vegas, NV. 2022 (Certificate)
Attended classes on the Mandalay Bay Shooting (LVMPD); Single Officer
Vehicle Tactics (LVMPD); Unconventional Rifle Fighting Positions; FACES

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of Concealed Carry; NRA LE's Creating a Red Dot Transition Program for Your Agency; Special Purpose Rifle Program (LVMPD); Gunshot Wound Trauma Care; Human Factors & Firearms Instructors (Sgt. Jamie Borden). NRA Annual Conference, Houston, TX (2022). Attended industry trade show. Attended seminars: Training for Concealed Carry: Focusing on Developing Essential Skills (Jeff Gonzales); Evidence-Based Defensive Firearms Training: A Discussion for Instructors and Those Who Actually Train (John Correia). Instructor Update, DTI Urban Rifle, Sussex, NJ (John Farnam, Instructor (2022) SHOT Show, Las Vegas, NV (2023): Attended firearms/law enforcement industry trade show. NRA Convention, Indianapolis, IN (2023). Attended firearms trade show; attended classes on Bulletproof Mind (Lt. Col. Dave Grossman); Myths of Concealed Carry (John Correia). IALEFI Annual Training Conference, Houston, TX (2023). Attended classes on the Uvalde School Shooting (ALERRT); Red Dot Pistol Optic Instructor Training.

**PROFESSIONAL
ASSOCIATIONS
& MEMBERSHIPS:**

American Bar Association (Member 1978-1997)
Association of the Bar of the City of New York (Member 1978-1998)
Pennsylvania Bar Association (Member 1994-2007, 2012-present)
Bar Association of Lehigh County (Member 1994-2007, 2012-present)
Pennsylvania Trial Lawyers Association (Member through 2004)
Association of Trial Lawyers of America (Member through 2004)
American Inns of Court (Member 2000-2007)
Barristers Inn, Allentown, PA (2012-present)
Muhlenberg College Board of Associates
National Rifle Association (Endowment Member)
International Association of Chiefs of Police (Associate Member 1985-1992)
International Association of Law Enforcement Firearms Instructors (see above)
Police Marksman Association (Member, Nat'l Advisory Board 1987-2004)
American Society for Industrial Security (Member)
Tactical Response Association (former Charter Member)
Justice System Training Association (former Member)
American Society of Law Enforcement Trainers (former Charter Member)
Outdoor Writers Association of America (Member 1987-1990)
U.S. Practical Shooting Association (former Member)
U.S. Revolver Association (Member 1983-1989)
Pennsylvania Chiefs of Police Association (former Associate Member)
Pennsylvania Sheriff's Association (former Associate Member)
Appointed Senior Research Associate, Carnegie Mellon University Center for the Advancement of Applied Ethics (1994)
Appointed to Advisory Board, AWARE (1995)
Appointed as Fellow, Defensive Handgun Training Institute (1996)
Appointed to Pennsylvania Municipal Police Officers Education and Training

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Commission Committee to develop standards and curriculum for decision-making training simulator/judgmental use of force mandatory in-service training program (1997-98); Curriculum Development Committee for revision of Act 120 Police Academy curriculum used statewide; patrol rifle training standards (2004-); revision of Act 120 Police Academy lesson plans, training videos, and related materials used at all police academies in PA (2015); and development of Mandatory In-Service Training Program on “Use of Force” (2015 development for 2016 presentation statewide) .
National Tactical Officers Association (former and current Member)
Associate Member, Fraternal Order of Police (Linton, Indiana Chapter 2008-12)
Member, International Law Enforcement Educators and Trainers Association (2009 -)
Member, Advisory Board, Armed Citizens Legal Defense Network (2012 -)
Member, Leadership Group, Safe Team, Faith Church, Trexlertown, PA (2017-)
Member, Security Committee, Temple Beth El, Allentown, PA (2019-)

**SELECTED MEDIA REFERENCES
AND ACKNOWLEDGMENTS:**

EMANUEL KAPELSOHN interviewed, mentioned and pictured in THE GUN DIGEST BOOK OF COMBAT HANDGUNNERY by J. Lewis and J. Mitchell (Northfield, IL 1983). Quote from p. 117: “His research and personal experience in self-defense firearms training make [Kapelsohn] one of the most qualified people in the business.”

EMANUEL KAPELSOHN interviewed on subject of firearms self-defense on ABC Television show “What’s Up, America?” (1980 and re-run)

“Midland Park Hires Weapons Specialist,” The Sunday News (Ridgewood, NJ. March 1984)

“Firearms Trainer to be Hired,” Suburban News (Wayne NJ. March 21, 1984)

“Midland Park Will Hire Firearms Pro for 9mm Courses,” The Northwest News (Midland Park, NJ. March 22, 1984)

“Gun Expert Rated High,” The Sunday News (Ridgewood NJ. April 8, 1984)

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Wilmington, NC Star
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“Don’t Shoot at the Sky! A Common-Sense Reminder After A Stray Shot Hits Boy at IronPigs Game,” by Steve Novak, Lehighvalleylive.com, July 30, 2019.

“Ugly racism: Full acquittal in fatal Pittston Shooting,” Patrick Kernan, [Times Leader](http://TimesLeader), October 5, 2018.

“CMPD Shooting is legally justified, some experts say, but raises ‘serious questions,’ ” by Ames Alexander, Charlotte Observer, April 15-16, 2019.

“For Years, CMPD has pledged improved training. It hasn’t been enough,” by Fred Clasen-Kelly, James Webster, Ames Alexander, and Danielle Chemtob, Charlotte Observer, April 16, 2019.

“Jonathan Roselle, former South Whitehall officer, charged in shooting, takes stand; expert witnesses defend his actions,” Michelle Merlin, The Morning Call, March 18, 2020. E. Kapelsohn cited and quoted.

“Police Training Expert Says ‘I Can’t Breathe’ Resolution Is Redundant Under MPD Policy, Others Disagree,” by Bryan Polcyn, Fox6Now.com, June 16, 2020.

“What Milwaukee Police Policies Really Say (and Why It Matters)” by Amanda St. Hilaire, Fox6Now.com, June 22, 2020.

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Emanuel Kapelsohn
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“Use of Force Expert Gives His Take on Video Showing Officer Kneeling On Man in Allentown,” by Bo Koltnow, Lehigh Valley Regional News, July 13, 2020.

“The Devil You Know” TV Episode 2021, regarding the Barbara Rogers/Stephen Mineo incident, episode aired April 26, 2021.

“Man Paralyzed in Accidental Shooting in Poconos Reaches \$5.5 Million Settlement,” by Hannah Phillips, Pocono Record, September 14, 2021.

“Grand Rapids Officer Charged with Careless Gunfire Wants Case Thrown Out” by Susan Samples, Target 8 News, Grand Rapids, posted June 16, 2022, 8:18 p.m. EDT. And TV: New at 6: Target 8 Investigates, Newsclip: Officer Greg Bauer.

**PARTIAL LIST OF
FIREARMS-RELATED
PUBLICATIONS:**

SWAT TEST THE DETONICS MC-2 .45 AUTO by Emanuel Kapelsohn,
Survival Weapons and Tactics (SWAT) (October 1983)

TEST & EVALUATION: COLT “GOV’T” .380 AUTO by Emanuel Kapelsohn,
Survival Weapons and Tactics (SWAT) (March 1984)

BUCKSHOT PATTERNS: THE MYTH/THE REALITY by Emanuel
Kapelsohn, Survival Weapons and Tactics (SWAT) (March 1984)

TEST & EVALUATION: IVER JOHNSON .380 AUTO by Emanuel
Kapelsohn, Survival Weapons and Tactics (SWAT) (March 1984)

BEST BUY” OUT-OF-THE-BOX POCKET .45 by Emanuel Kapelsohn,
Survival Weapons and Tactics (SWAT) (June 1984)

WINCHESTER’S WINNING RIOT SHOTGUN by Emanuel Kapelsohn,
Special Weapons (Fall 1984)

TEST AND EVALUATION: STEYR GB 9mm SEMIAUTOMATIC PISTOL
by Emanuel Kapelsohn, Survival Weapons and Tactics (SWAT) (August 1984)

PRODUCT REPORT: HANSEN .22 RIMFIRE AMMUNITION by Emanuel
Kapelsohn, Survival Weapons and Tactics (SWAT) (August 1984)

FIELD TEST: STEYR GB 9mm PISTOL by Emanuel Kapelsohn, The Police
Marksman (May/June 1984)

SHOOTING THROUGH COAT POCKETS by Emanuel Kapelsohn, Survival
Weapons and Tactics (SWAT) (September 1984)

Note: The above article was also reprinted in part, and research results

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Emanuel Kapelsohn
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summarized, in “Pocketing a Pistol Poses Problems for Your Officers,” by Bill Clede, Training Aids Digest, Vol. 11 No. 12., Washington Crime News Services (December 1986)

BUCKSHOT BREAKTHROUGH by Emanuel Kapelsohn, Survival Weapons and Tactics (SWAT) (October 1984)

TEST & EVALUATION: KFC M-250 AUTOLOADING SHOTGUN
by Emanuel Kapelsohn, Survival Weapons and Tactics (SWAT)
(December 1984)

BALLISTIC AND RIOT SHIELDS by Emanuel Kapelsohn,
The Police Marksman (September/October 1984)

FIELD TEST: FEDERAL “PREMIUM” COPPER-PLATED BUCKSHOT
by Emanuel Kapelsohn, The Police Marksman (November/December 1984)

FIELD TEST: MANURHIN MODEL PPK/S .380 PISTOLS by Emanuel
Kapelsohn, The Police Marksman (Nov/Dec 1984)

RUGER MODEL 77/22: A RIMFIRE WITH CLASS by Emanuel Kapelsohn,
Survival Weapons and Tactics (SWAT) (April 1985)

FIRST IMPRESSIONS: RUGER XGI RIFLE by Emanuel Kapelsohn,
Survival Weapons and Tactics (SWAT) (April 1985)

THE AMAZING AUG by Emanuel Kapelsohn, Survival Weapons and Tactics (SWAT) (June 1985)

FIELD TEST: COLT .45 OFFICER’S ACP by Emanuel Kapelsohn,
The Police Marksman (May/June 1985)

FIELD TEST: RUGER REDHAWK .41 MAGNUM REVOLVER
by Emanuel Kapelsohn, The Police Marksman (May/June 1985)

GETTING OUT OF A GUN JAM by Emanuel Kapelsohn, Soldier of Fortune
(July 1985)

HIGH-QUALITY, LOW-COST HANDGUN TRAINING AMMUNITION
by Emanuel Kapelsohn, The Police Marksman (July/August 1985)

POLISHING PUMP-GUN TECHNIQUE by Emanuel Kapelsohn,
Soldier of Fortune (October 1985)

FIELD TEST: PRO-SHOT TIMER AND PRO TIMER II by Emanuel
Kapelsohn, The Police Marksman (January/February 1986)

FIELD TEST: HECKLER & KOCH P7 M13 PISTOL by Emanuel Kapelsohn,
The Police Marksman (January/February 1986)

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Emanuel Kapelsohn
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POLICE FIREARMS REQUALIFICATION: READY, AIM, FIRE?
by J. Maddaloni, Jr. and E. Kapelsohn, New Jersey Municipalities (Nov. 1985)

SHOTGUN PATTERNS, CHOKES, AND PERFORMANCE by Emanuel
Kapelsohn, The Police Marksman (September/October 1985)

LOW-LIGHT SHOOTING by Emanuel Kapelsohn, Soldier of Fortune
(April 1986)

SPRINGFIELD ARMORY'S "NEW" 1911-A1 PISTOL by Emanuel Kapelsohn,
Special Weapons and Tactics, (SWAT) (April 1986)

PROGRESSIVE FIREARMS TRAINING by Emanuel Kapelsohn,
Security Management (February 1986)

STEYR'S SPACE-AGE AUG by Emanuel Kapelsohn, Gun Digest Book of
Assault Weapons (Chapter 4) J. Lewis, Ed. (DBI Books, Northbrook, IL 1986)

THE GLOCK STRIKES by Emanuel Kapelsohn, Guns Magazine Annual Digest
(1987 Vol. 33)

U.S. LAW ENFORCEMENT VS. TERRORISM: PUTTING A LID ON
VIOLENCE BEFORE IT STRIKES by Emanuel Kapelsohn, Terrorism
(September 1986)

FIREARMS OWNERS PROTECTION ACT AFFECTS AUTOMATIC
WEAPONS OWNERSHIP AND INTERSTATE TRANSPORTATION OF
FIREARMS by Emanuel Kapelsohn, The Police Marksman (July/August 1986)

THE MAGNIFICENT GLOCK 17 PISTOL by Emanuel Kapelsohn, The Police
Marksman (September/October 1986)

BORN IN THE USA: COLT REINTRODUCES THE SMG by Emanuel
Kapelsohn, Soldier of Fortune (March 1987)

THE GLOCK 17 9mm PISTOL by Emanuel Kapelsohn, Law and Order
(October 1986)

POWER FROM A DISTANCE: COLT'S NEW COUNTER-SNIPER RIFLE,
THE DELTA H-BAR by Emanuel Kapelsohn, Police (February 1987)

COLT 9mm SMG by Emanuel Kapelsohn, Police (February 1987)

PREVIEWING COLT'S NEW DELTA H-BAR: THE AR-15 COUNTER-
SNIPER RIFLE by Emanuel Kapelsohn, Special Weapons and Tactics
(SWAT) (February 1987)

FIELD TEST: SPRINGFIELD ARMORY 1911-A1 PISTOL by Emanuel

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Kapelsohn, The Police Marksman (January/February 1987)

IALEFI by Emanuel Kapelsohn, The Police Marksman (Jan./Feb. 1987)

COLT'S 10mm DELTA ELITE: MAGNUM POWER IN AN AUTOLOADER
by Emanuel Kapelsohn, Police (August 1987)

TRANSITIONAL HANDGUN TRAINING: SWITCHING TO SEMI-AUTOMATICS by Emanuel Kapelsohn, Law Enforcement Technology (May/June 1987)

1987 IALEFI NATIONAL TRAINING CONFERENCE SCHEDULED FOR MESA, ARIZONA by Emanuel Kapelsohn, Law and Order (August 1987)

AN INSTRUCTOR'S LOOK AT DEA FIREARMS TRAINING by Emanuel Kapelsohn, The Police Marksman (May/June 1988)

GLOCK 19: THE IDEAL 9mm FOR THE ONE GUN CONCEPT by Emanuel Kapelsohn, The Police Marksman (September/October 1988)

RELOADING THE SEMI-AUTOMATIC PISTOL - PART ONE by Emanuel Kapelsohn, International Association of Law Enforcement Firearms Instructors Newsletter (February 1989)

COMBAT TEST: THE NEW GLOCK 20 by Emanuel Kapelsohn, Combat Handguns (June 1990)

THE NEW 10mm GLOCK 20: MAGNUM POWER IN A DOUBLE-ACTION SERVICE PISTOL by E. Kapelsohn, The Police Marksman (May/June 1990)

BERETTA 85F .380 PISTOL by Emanuel Kapelsohn, The Police Marksman (November/December 1990)

THE UNIVERSAL COVER MODE, OR HOW TO NOT SHOOT PEOPLE by Emanuel Kapelsohn, The Firearms Instructor (May 1991 and August 1991)

THE UNIVERSAL COVER MODE, OR HOW TO NOT SHOOT PEOPLE by Emanuel Kapelsohn, reprinted in Newsletter of Georgia Association of Law Enforcement Firearms Instructors, Vol. 1, Quarter 4 (Oct. 1991)

“Introduction to the Glock Pistol” videotape produced by The Peregrine Corporation and featuring Emanuel Kapelsohn (48 mins., in police and civilian versions) Glock, Inc., Smyrna, GA 1991

GLOCK PREVENTIVE MAINTENANCE MANUAL by Emanuel Kapelsohn (Glock, Inc., Smyrna, GA 1991)

FIREARMS TRAINING STANDARDS FOR LAW ENFORCEMENT PERSONNEL (IALEFI, Laconia, NH 1993). E. Kapelsohn, principal

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author and editor

GIVING THE COMMAND TO HOLSTER by Emanuel Kapelsohn
The Firearms Instructor (Winter 1993)

STANDARDS & PRACTICES REFERENCE GUIDE FOR LAW
ENFORCEMENT FIREARMS INSTRUCTORS, E. Kapelsohn, Associate
Editor (IALEFI, Laconia, NH 1994)

SMITH & WESSON SIGMA by E. Kapelsohn, Law & Order (Oct. 1994)

GLOCK MODELS 26 & 27 SUBCOMPACT PISTOLS by Emanuel Kapelsohn,
Police Marksman (Nov./Dec. 1995)

IALEFI APPROVES ITS FIRST TARGET - THE IALEFI-Q by Emanuel
Kapelsohn, The Firearms Instructor, Vol. 17 (1995)

WHAT'S IN A TARGET? INTRODUCING THE IALEFI-Q by Emanuel
Kapelsohn, Police Marksman (May/June 1996)

P95: INTRODUCING RUGER'S FIRST POLYMER-FRAME SERVICE
PISTOL by Emanuel Kapelsohn, Police Marksman (July/August 1996)

P239: SIG'S NEW COMPACT 9mm PISTOL by Emanuel Kapelsohn,
Police Marksman (July/August 1996)

RAPID ACQUISITION TARGETING SYSTEMS LASER SIGHT
by Emanuel Kapelsohn, Police Marksman (July/August 1997)

“IALEFI Handgun Safety Check” videotape, written by and featuring
E. Kapelsohn, produced by North Carolina Justice Academy (IALEFI 1997)

IALEFI HANDGUN SAFETY CHECK booklet, Emanuel Kapelsohn,
principal author (IALEFI 1998)

FIELD TEST: SPEER GOLD DOT 125-GRAIN .38 SPECIAL AMMUNITION
by Emanuel Kapelsohn, Police Marksman (March/April 1998)

THE PATROLLER POLICE VEHICLE by Emanuel Kapelsohn,
Law & Order (March 1998)

FBI INSTITUTES NEW CONTROLS FOR SCENARIO TRAINING
by Emanuel Kapelsohn, The Firearms Instructor, Issue 26 (1999)

SAFETY TIP by Emanuel Kapelsohn, The Firearms Instructor, Issue 26 (1999)

FOR GUN SAFETY, STICK TO FOUR RULES, BUT WATCH OUT FOR
THE FOUR MYTHS by Emanuel Kapelsohn, Allentown Morning Call,
(October 22, 1999)

Curriculum Vitae:
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Handgun Shooting Fundamentals section, Basic Police Academy
curriculum lesson plan, Pennsylvania Municipal Police Officers
Education and Training Commission. Emanuel Kapelsohn, author (2000)

THE FIREARMS INSTRUCTOR'S RANGE BAG by Emanuel Kapelsohn,
The Firearms Instructor, Issue 29 (2000)

FIELD TEST: SIGARMS SSG3000 TACTICAL PRECISION RIFLE by
Emanuel Kapelsohn, Police Marksman (July/August 2000)

IALEFI Q-TARGET UPDATE by Emanuel Kapelsohn, The Firearms Instructor,
Issue 30 (2001)

PARA-ORDNANCE LDA PISTOL ARMORERS MANUAL (2001 and rev.)

PARA-ORDNANCE LDA FIREARMS INSTRUCTOR NOTEBOOK (2001)

KIMBER PISTOL ARMORER'S NOTES (2001)

KIMBER PISTOL INSTRUCTOR WORKSHOP NOTEBOOK (2001)

GUIDELINES FOR SIMULATION AND "FORCE ON FORCE" TRAINING
(Draft, IALEFI, Gilford, NH 2001). Emanuel Kapelsohn, principal author.

AVOIDING TRAINING DEATHS: SAFETY CONSIDERATIONS IN ROLE
PLAYING EXERCISES by Emanuel Kapelsohn, The Firearms Instructor, Issue
31 (2002)

REDMAN PROVIDES SIMULATION TRAINING POSTER by Emanuel
Kapelsohn, The Firearms Instructor, Issue 32 (2003)

Contributor to RedMan Firearms Simulation Safety Poster (2003)

Bobcat Weapons BW-5 Operator's Manual. Emanuel Kapelsohn, author. (2004)

FIREARMS TRAINING STANDARDS FOR LAW ENFORCEMENT
PERSONNEL (IALEFI, Gilford, NH 2004 Rev.). E. Kapelsohn, principal
author

IALEFI GUIDELINES FOR SIMULATION TRAINING SAFETY. E.
Kapelsohn, principal author. (IALEFI, Gilford, NH 2004)

"More First Hand Information," by Emanuel Kapelsohn. The Gun Zone.
<http://www.thegunzone.com/ayooob/magliato-kapelsohn.html>

COURSES OF FIRE – PENNSYLVANIA BASIC HANDGUN
QUALIFICATION COURSE by Emanuel Kapelsohn, The Firearms Instructor,
Issue 42 (2007). Also reprinted in excerpted form in Pennsylvania MPOETC

Curriculum Vitae:
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Training Bulletin, Fall 2007.

QUALIFICATION COURSES OF FIRE: PENNSYLVANIA’S ADVERSE
LIGHT QUALIFICATION COURSE by Emanuel Kapelsohn, The Firearms
Instructor, Issue 44 (2008).

GETTING AND STOCKING A “GO BAG” by Emanuel Kapelsohn, The
Firearms Instructor, Issue 53 (2012).

“Banning Assault Weapons Won’t Make Nation’s Schools Safer” by E.
Kapelsohn, Allentown Morning Call, Op-Ed, January 6, 2013

“No Prepping,” Letter to the Editor, HANDGUNS Magazine, April/May 2014.

“The Glock Model 43: New 9mm Micro-Pistol,” by Emanuel Kapelsohn.
Law and Order magazine, August 2015.

“There Are No Safe Guns,” by Emanuel Kapelsohn. The Firearms Instructor,
Issue 58 (2016)

“Pennsylvania State Police Firearms Instructor Criminally Charged in Training
Death of Trooper,” by Emanuel Kapelsohn. The Firearms Instructor, Issue 58
(2016)

“Baltimore Police Firearms Instructor Convicted of Reckless Endangerment in
Accidental Shooting During Simunitions Training,” by Emanuel Kapelsohn.
Anticipated publication date: The Firearms Instructor, Issue 59 (2017)

“Civilian Response To Active Shooter Events,” by Emanuel Kapelsohn, Network
Magazine, January 2017

“For the Record” (letter to the Editor concerning the Yanez shooting incident and
trial. Concealed Carry Magazine, August/September 2017. Vol. 14, Issue 6.

“Safety With Dropped Guns” by Emanuel Kapelsohn, IALEFI Press-Check
(2021) and PA MPOETC Newsletter.

“To Score Or Not To Score: That Is The Question” by Emanuel Kapelsohn,
The Press Check, IALEFI (2021)

“Safety Guidelines for Simulation Training,” by Emanuel Kapelsohn, 2023
Revision, IALEFI, Gilford, NH.

**SELECTED LIST
OF AGENCIES
TRAINED AND
COURSES TAUGHT:**

Basic Pistol and Special Pistol courses, American Pistol Institute

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(Paulden, AZ 1980-1982): staff instructor.

Firearms Safety, Basic Handgun and Defensive Handgun courses,
U.S. Treasury Department Pistol Club, New York, NY (1980-1983).

Defensive Handgun Training, The Spiesman Agency, New York, NY
(1980-83): provided handgun training for detective agency.

Defensive Handgun Training and Qualification, Danbee Investigations
(New Jersey 1983): provided handgun training for detective agency
personnel.

Officer Survival Instructor Course. Massachusetts Criminal Justice Training
Council. (1984): taught the firearms portion of this instructor-level course.

Close-Range Handgun Techniques: Sampson Technical College, Clinton,
NC (1984). Taught this defensive handgun class.

Borough of Midland Park Police Department (NJ 1985): conducted semi-
automatic pistol transitional training for this department.

Union County (New Jersey) Prosecutor's Office (Senior Firearms Instructor
Course. 1985): co-instructed three separate week-long courses for firearms
instructors from every police department in Union County under contract with
Rockwood Corporation, Police Training Division.

International Police Academy - Master Instructors Seminar (Morell,
Desmedt, et al.): guest instructor (Toms River, NJ 1986)

Connecticut State Police Academy. (Senior Firearms Instructor Course.
Meriden, CT, 1986 and 1988): guest instructor under contract with Rockwood
Corporation, Police Training Division.

NRA Law Enforcement Firearms Instructor School (U.S. Marine Base,
Quantico, VA 1986): instructor.

Hilltown Township Police Department (PA 1986): conducted semi-automatic
pistol transitional training for this department.

Glock Familiarization Course, Middlesex County, NJ 1987: taught a one-day
familiarization course for police firearms instructors from multiple agencies.

1987 Glock International Training Symposium. (Kansas City, Kansas): headed
a team of four instructors in conducting this training conference for some 70
participants.

Police Counter-Sniper Rifle Course. (Fort Dix, New Jersey 1987): co-instructed
this course for police and military counter-snipers.

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Borough of Ramsey Police Department (NJ 1987): conducted semi-automatic pistol transitional training program for this department.

International Association of Law Enforcement Firearms Instructors (IALEFI), National Training Conferences (see above): conducted instructor-level programs on Drawing the Handgun and Close-Range Shooting Techniques (Philadelphia 1985); Dim Light Shooting Techniques, and Combat Shotgun Characteristics (Orlando, FL 1986); Tactical Use of Cover (Mesa, Arizona 1987); Dim-Light Assault Rifle and Shotgun Techniques, and Semi-Automatic Pistol Transitional Training (St. Augustine, FL 1988); Dim-Light Shotgun and Rifle Techniques (Salt Lake City 1989); Concealed Carry Handgun, Auto-Pistol Transitional Training, Dim-Light Handgun and Shotgun, and Police Handgun Caliber Selection and Effectiveness (panel) (Washington, D.C. 1990); Firearms Safety; Involuntary Muscular Contraction and Unintentional Discharge (co-instructed with Dr. Roger Enoka) (Mesa, AZ 1991); Developing Dynamic Training Exercises for the Patrol Officer (co-instructed with Peter Tarley) (Tampa, FL 1992); Development of Dynamic Training Exercises for Patrol Officers (co-instructed with Peter Tarley) (Reno, NV 1993); Dynamics of a Gunfight (Orlando, FL 1994); Training Handgun Skills (Amarillo, TX '95).

Basic and Advanced Defensive Handgun Courses (1982-1993): co-instructed (with John Farnam) courses in locations including Fort Mead (MD), Norristown (PA), Ledgewood (NJ), Berkeley Township (NJ), Princeton Junction (NJ), Pipersville (PA), Dutchess County (NY), New York City (NY), Salt Lake City (UT), Bradford (RI), Elroy (WI), East Stroudsburg (PA), and Atlantic City (NJ).

New Jersey Armored Motor Carriers Association (1987): guest speaker on subject of firearms training for the armored car industry.

Defensive Shotgun Course (East Stroudsburg, PA 1987).

Armored Motor Service Corp. (Trenton, NJ 1985-88): conducted handgun training and qualification.

Princeton Armored Service (Trenton, NJ 1986-1990): conducted handgun training and qualification.

Eastern Armored Service (Trenton, NJ 1991-1997): conducted handgun training and qualification.

Berkleigh Career School (East Brunswick, NJ 1988-1989): conducted firearms training program for security officer trainees.

NRA Law Enforcement Semi-Automatic Pistol Seminars. Helped to design, and served as chief instructor for these courses taught at U.S. Marine Base, Quantico, VA (1987); Florida Law Enforcement Training Center at Lively (1988); Oklahoma City Police Academy (1988); Port Huron, Michigan (1988); and Alamo Area Law Enforcement Academy, San Antonio, TX (1988).

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Miami (FL) Police Department (Firearms Instructor Course, 1987): trained MPD firearms instructors as part of this agency's transition from revolver to semi-automatic.

New Jersey Department of Environmental Protection, Bureau of Law Enforcement (Firearms Instructor Workshop, 1987): trained NJDEP instructors for this agency's transition from revolver to semi-automatic.

National Armored Car Association (Annual Meeting. New York, NY 1987): guest speaker on subject of current trends in firearms training and training-related liability.

Atlantic City Police Academy. (Police Handgun Instructor Workshop, 1987. Police Shotgun Instructor Workshop, 1987. Police Special Weapons Course, 1987. Glock 17 Familiarization Course, 1987).

New Jersey Correctional Officers Training Academy, Training Advisory Council (1988): guest speaker on progressive firearms training and training liability.

Jacksonville (FL) Police Department (Firearms Instructor Course, 1988): conducted handgun and shotgun instructor course.

Tennessee Bureau of Investigation (Firearms Instructor Course, 1988): trained TBI firearms instructors in preparation for agency's transition from revolver to semi-automatic pistol.

Metropolitan Toronto Police (Auto-pistol Workshop. Toronto, Canada 1988): conducted transitional pistol training for members of this agency's police academy, Emergency Task Force, and dignitary protection unit.

NRA Annual Meeting (Orlando, FL 1988): guest speaker before the Legislative Affairs Committee and the opening session of the General Meeting.

Burlington County (NJ) Police Academy (Semi-Automatic Pistol Instructor Workshops, 1985-1987; Shotgun Instructor Workshop, 1987; Officer Survival Course, 1988; Firearms Instructor Update, 1991).

Atlantic City Police Department (Firearms Instructor Course, 1988): trained ACPD instructors to conduct agency's transition from revolvers to pistols.

Professional Conference, "Law and Management in the Security Industry." University of the West Indies, St. Augustine, Trinidad. July 1988. Featured guest lecturer on topic "Current Trends in Firearms Training."

New Jersey Department of Corrections (1988): conducted semi-automatic pistol survey course as part of this agency's process of selecting a service pistol.

Takoma Park Police Department (Maryland, 1988): conducted instructor-level

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transitional training course.

Police Counter-Sniper Rifle Course (Glastonbury, Connecticut. 1988):
co-instructed this course for police counter-snipers.

SWAT Team Training Course. (Cape May County Police Academy, 1988):
conducted tactical team training in handgun, shotgun, assault rifle, and
submachine gun.

Lecture presentation: "Police Use of Lethal Force: Legal and Tactical
Considerations." Emanuel Kapelsohn and Sgt. Evan Marshall. (Mt. Laurel,
New Jersey. 1988).

Jacksonville (Florida) Police Department (Firearms Instructor Workshop, 1988):
conducted transitional training instructor course preliminary to this agency's
switch to semi-automatic pistols.

Conducted Glock Armorer Courses in Atlantic City, Boston, Sacramento,
San Francisco, San Diego, Carson City (Nevada), Washington, Chicago,
Trenton, New York City, Philadelphia, Indianapolis, Baltimore, Spokane,
Atlanta, Greensboro, Carlisle (PA), Phoenix, Oklahoma City, Seattle,
San Antonio, Jersey City, St. Thomas, Barbados, Billings (MT), Springfield
(MO), Wenatchee (WA), Jersey City (NJ), Bergen County (NJ) Police
Academy, Wyandotte (MI), Essex County (NJ) Police Academy, Overland
(MO), Irvington (NJ) Police Department, San Antonio (TX), Miami (FL), South
Carolina Justice Academy, North Carolina Justice Academy, St. Petersburg
(FL), Jacksonville (FL), Toronto, Barbados, Chapin (SC), Smyrna (GA),
Louisiana State Police Academy, and other locations (1987-1993).

Conducted Glock Firearms Instructor Workshops for/at Fulton County Sheriff's
Office (NY), Yellowstone County Sheriff's Office (MT), Middlesex County
(NJ) Police Academy, Bergen County (NJ) Police Academy, El Cajon (CA)
Police Department, Barbados Police Service, St. Petersburg (FL) Police
Department, North Platte (NE) Police Department, Overland (MO), Chapin
(SC), Essex County (NJ) Police Academy, Springfield (MO) Police
Department, Wenatchee (WA), Spokane (WA) Police Academy, Snohomish
County (WA) Sheriff's Office, Louisiana State Police Academy, Jersey City
(NJ) Police Department, Smyrna (GA), and others (1987-1993).

Conducted Glock Armorer Classes and Glock Firearms Instructor Workshops at
Glock facility in Smyrna, Georgia, 1988-1993 (multiple classes).

Massachusetts Metropolitan Police (Boston, Massachusetts. 1988): trained
firearms instructors to conduct this agency's transition to semi-auto pistols.

Sacramento Municipal Utilities District (California, 1988): trained nuclear
security firearms instructors for Rancho Seco nuclear power facility.

American Society of Law Enforcement Trainers, Second Annual International

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Training Seminar (Kansas City, Missouri. 1989): conducted instructor-level workshop on concealed handgun draw techniques and close-range defensive tactics.

Metropolitan Police (Washington, D.C., 1989): conducted two programs to train firearms instructors and armorers to implement this agency's transition to semi-automatic pistols.

Camp Smith, NY (1989): Speaker at Westchester County Firearms Instructors Seminar on Semi-Automatic Pistol Transitional Training. Topic: "Safety In The Transitional Training Program."

Trenton (New Jersey) Police Department (1989): trained firearms instructors and armorers to conduct agency's transition to semi-automatic pistols.

New York Legal Aid Society (New York City, 1989?): co-instructed (with Firearms Examiner D. Frangipani) firearms evidence lecture for attorneys.

Philadelphia Police Department (1989): trained firearms instructors and armorers to conduct agency's transition to semi-automatic pistols.

Trinidad-Tobago Police Academy (Port-of-Spain, 1990): presented firearms instructor workshop in conjunction with handgun training program conducted at Teteron Military Base.

Louisiana State Police Academy, Baton Rouge, LA (1990): conducted submachine gun instructor school.

New York State Police (1990): performed a contract to conduct a series of programs at five locations throughout New York State to train NYSP firearms instructors to conduct agency's transition to semi-automatic pistols.

IALEFI Regional Training Conference (Long Island NY. 1990): conducted dim-light handgun training class.

Henrico County Police Department (Virginia, 1990): conducted two training programs to prepare agency's instructors to conduct transition to semi-automatic pistols.

Virgin Islands Police Department (St. Thomas, 1990): conducted semi-automatic pistol instructor training program.

Developed police shotgun armorer training program for O. F. Mossberg & Sons, and conducted first Mossberg Shotgun Armorer Courses in Burbank, Tacoma, Philadelphia, North Haven (CT), South Carolina Criminal Justice Academy, North Carolina Justice Academy, Skokie (IL), Kansas City, San Antonio, Louisiana State Police Academy, Salt Lake City, and other locations (1990-1992). Course revised 2000, below.

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Baltimore City Police Department (1990): conducted semi-automatic pistol instructor training program.

Missouri State Highway Patrol (1990): presented training program to prepare agency's instructors to conduct transition to semi-automatic pistols.

Atlantic County's Prosecutor's Office: conducted Firearms Instructors Recertification Course for all police firearms instructors in county (1990-2001)

Phoenix Regional Police Academy (1991): conducted armorer and semi-automatic pistol instructor training program.

Maryland National Capital Park Police (1991): conducted semi-automatic pistol instructor training program.

IALEFI Regional Training Conference (Dutchess County, N.Y. 1991): taught classes on cover mode and involuntary discharge; advanced shotgun techniques.

DSIP (Caracas, Venezuela. 1991): conducted firearms training program for bodyguard detail of President of Venezuela, and for members of drug task force and elite counter-terrorist unit.

Oregon State Police (1991): conducted training program to prepare agency's instructors to conduct transition to semi-automatic pistols.

Clients for which Mr. Kapelsohn has provided training and consulting services, both domestically and abroad from 1983 through the present time, include investigative agencies, executive protection details, armored car and precious metal companies, corporations involved in newspaper publishing, advertising, finance, pharmaceuticals, insurance, defense manufacturing, mining, firearms and related products, steel, the movie/television industry, and manufacturing industries; police departments, federal agencies, cities, and state law enforcement training commissions.

Kutztown Jaycees (1991): conducted firearms safety and BB gun marksmanship training class for 8-12 year olds.

Seattle Police Department (1991): conducted semi-auto pistol instructor program

American Society for Industrial Security (Schuylkill Valley Chapter, 1992): presented lecture on current trends in security and law enforcement firearms training.

NJ Department of Corrections, Glock 18 (select-fire pistol) Course for Witness Protection Detail, Atlantic City Police Range (1992)

American Society of Law Enforcement Trainers Fifth International Training Seminar (Milwaukee 1992): presented instructor-level classes on involuntary muscular contraction and involuntary discharge.

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IALEFI Regional Training Conference (Dutchess County, NY 1992): presented lecture on training-related liability, documentation of training, and written agency firearms policy.

IALEFI Regional Training Conference (Long Island, NY 1992): conducted classes on tactical handgun and dim-light handgun.

Reading Area Community College (1992): Police Semi-Automatic Pistol Instructor Workshop.

National Tactical Invitational, Lewisberry, PA 1992: taught class, "Legal Considerations in the Use of Deadly Force."

Northeastern Berks Regional Police Department (1992): Semi-Automatic Pistol Training Program.

Salt Lake County Sheriff's Department (1992): trained armorers and firearms instructors to conduct transition to semi-automatic pistols.

Tactical Shotgun Course (1993): Pleasantville (NJ) Police Range.

IALEFI Regional Training Conference (Nassau County, NY 1993): conducted class on firearms-related liability, written departmental firearms policies, and documentation of training.

Dallas Police Department (1993): conducted police firearms instructors course.

North Carolina Justice Academy, Statewide Firearms Instructors Conference (1993): Presented classes: Involuntary Muscular Contraction & Unintentional Discharge; Developing Dynamic Training Exercises for Patrol Officers.

Jacksonville (FL) Police Department (1993): conducted police firearms instructors course.

Carnegie Mellon University Police Department (Pittsburgh 1993): conducted transitional training program and handgun instructor workshop.

Calgary Police Service Tactical Unit (1993): taught special weapons course including submachine gun, shotgun, rifle, and handgun.

Yardley, PA (1994): Instructed Defensive Handgun Course.

Guest Speaker on topic "Should I Carry a Gun?" at JCK Show, Las Vegas, NV (June 1994).

Connecticut Police Academy, Meriden, CT. Co-instructed senior instructor program "Selecting a Shoulder Weapon" (April 1994).

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“Firearms Training Liability and Trends,” Lehigh Valley Chapter, American Society for Industrial Security (1994).

Kutztown Police Department (1994): conducted handgun and shotgun training.

Defensive Shotgun Courses, Pittsburgh, PA and Harvard, Mass. (1995).

Handgun training and qualifications, Eastern Armored Service (Trenton, NJ 1994-1996).

Guest speaker, Firearms Committee, Pennsylvania Municipal Police Officers Education and Training Council (Hershey, PA 1995).

Connecticut Police Academy, Meriden, CT. Co-instructed Tactical Shotgun Instructor course (1995).

“Trends in Police Firearms Training,” Pennsylvania Burglar and Fire Alarm Association, Allentown, PA (1995).

Senior Firearms Instructor Course, Allentown Police Academy (PA 1995).

Defensive Handgun Course, Lehigh County District Attorney’s Office, Allentown, PA (1996).

Firearms Instructor Recertification Course, Dallas Police Department, Dallas, TX (1996).

Glock 19 Transition Courses, Princeton Armored Service, Trenton, NJ (1995-6)

Lecture: “Firearms Training-Related Liability,” Annual Conference, Arizona Law Enforcement Firearms Instructors Association, Mesa, AZ (1996).

Firearms Safety Program, Cub Scouts of America, Tipton, PA (1996).

Basic Personal Protection Handgun Courses, Tipton (PA) Fish & Game Association Range (1994-1996).

IALEFI Handgun Safety Check, IALEFI Regional Training Conference, Philadelphia Police Academy (1996).

Legal and Practical Aspects of Firearms Self-Defense for Civilians, Muhlenberg Township Recreation Department (1996-1997).

American Society of Law Enforcement Trainers Regional Training Conference, Bergen County (NJ) Police Academy (1996): conducted instructor-level courses on Tactical Handgun Skills; Dim-Light Handgun.

1996 IALEFI Annual Training Conference, Mesa, AZ. Co-instructed instructor-

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level courses on Training-Related Liability; Safety and Use of Reactive Steel Targets.

North Carolina Justice Academy Statewide Instructors Conference: conducted instructor-level lectures on firearms safety, dim-light firing techniques, and one-handed firearms manipulation (1997).

Berks County Sheriff's Department: conducted revolver-to-semiautomatic pistol transitional training for this 38-officer agency (1997).

IALEFI Regional Training Conference (Oklahoma City Sheriff's Office 1997): conducted instructor-level program, "Developing Dynamic Range Exercises for Patrol Officers."

Berks County Sheriff's Department: assisted in conducting in-service handgun and shotgun training, remedial training, and qualification (1997-2007, 2012).

IALEFI Annual Training Conference (Columbia, Missouri, 1997): co-instructed instructor-level program, "Legal Liability Update"; conducted IALEFI Handgun Safety Check for over 100 students; chief safety coordinator for this 6-day conference involving some 500 participants (students, instructors, vendors) in day and night training activities, displays, and competitions. Courses attended: see above.

Lehigh County (PA) District Attorney's Office (1997): conducted handgun training course.

Kutztown (PA) Police Department: conducted in-service handgun and shotgun training and qualification (1997, 2000, 2001, 2002, 2003).

Harrisburg Area Community College: Co-instructed pilot judgmental use of force class for Pennsylvania MPOETC (1998).

Allentown (PA) Kiwanis Club: Guest speaker on "Firearms Safety and Self-Defense" (1998).

U.S. Department of Health & Human Services, Office of the Inspector General. Training and consulting contract to assist agency in updating its firearms training program for Special Agents (1998).

Northeastern Berks Regional Police Department (1998): Conducted handgun and shotgun qualifications and remedial training.

Berks County Postmasters Association: Guest speaker on "Personal Security" (1998).

Less Lethal 12-Gauge Impact Munitions User Certification Course (Berks County, PA, 1998).

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Camp Cadet, Oley, PA (1998): Firearms safety presentation for 10-14 year olds at summer camp sponsored by Pennsylvania State Police.

O.C. Civilian Users Certification Courses: Conducted a series of courses for employees and for security officers of Fortune 500 company (1998-2001).

IALEFI Annual Training Conference (West Palm Beach, FL, 1998): Presented instructor-level program, "Designing and Using Performance Objectives in Firearms Training"; conducted IALEFI Handgun Safety Check for over 100 students; chief safety coordinator for this 6-day conference involving some 500 participants (students, instructors, vendors) in day and night training activities, displays, and competitions. Courses attended: see above.

Harrisburg Area Community College: Assisted in presenting judgmental use of force instructor certification course for Pennsylvania MPOETC (1999).

Police Patrol Rifle Users and Instructors Courses (Muhlenberg Twp. Police Department 1999).

Presentations to Allentown, PA Chapter, American Inns of Court, on "Firearms, Tactics and the Law" (Sept. 1999) and "Use of Experts in Firearms Cases" (Oct. 1999).

IALEFI Annual Training Conference (Phoenix, 1999): Conducted IALEFI Handgun Safety Check for over 100 students; chief safety coordinator for this 6-day conference involving some 400 participants (students, instructors, vendors) in day/night training classes, displays and competitions.

Allentown (PA) Police Academy: Basic Recruit Training Academy classroom instructor on "Use of Force in Law Enforcement;" assistant range instructor in firearms (1999-2007). "Laws of Arrest" and "Criminal Procedure" (2007).

Firearms Overview Course (Allentown Police Academy, 1999): presented classroom and range program to researchers and doctors from University of Pennsylvania (FICAP) study on gunshot injuries.

IALEFI RTC (Philadelphia Police Academy, 2000): taught two courses on Tactical Shotgun.

Eddie Eagle Firearms Safety Program taught to approx. 120 children, grades K through 2, at The Swain School (Allentown, PA, 2000).

Firearms Instructor Update (Pennsylvania State Police Academy, 2000): presented instructor-level program for Pennsylvania Municipal Police Officers Education and Training Commission.

2000 IALEFI ATC, Tampa, FL: conducted IALEFI Handgun Safety Check for over 100 students; chief safety coordinator for this 6-day event involving

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nearly 500 participants (students, instructors, vendors) in day and night training activities, displays and competitions; taught Mossberg Shotgun Armorer Certification Course.

Lehigh County (PA) District Attorney's Office (2000): conducted training course, "Introduction to Firearms for Prosecutors" (CLE accredited) at Allentown Police Academy.

Mossberg Shotgun Armorer Certification Courses (North Haven, CT, 2000): presented two courses for police and military armorers. Consultant to Mossberg re. revision of Armorer's Manual.

"Legal and Practical Aspects of Firearms Self-Defense" (Topton, PA, 2000): presented two courses at East Penn Outdoor Sportsmen's Expo.

Eastern Armored Service (PA, 2000): conducted Glock pistol transitional training for armored car personnel.

Mossberg Shotgun Armorer Certification Course (Fairfax, VA, 2000): taught course for police armorers.

Guest Speaker at graduation dinner, Allentown (PA) Police Academy (2001)

Para-Ordnance LDA Pistol Armorer Certification Courses (Orange County, CA and Oak Lawn, IL, 2001): taught courses for police and civilian armorers.

Para-Ordnance LDA Pistol Firearms Instructor Workshop (Oak Lawn, IL, 2001): taught course for police firearms instructors in conjunction with agency's transition to this model of semi-automatic pistol.

Para-Ordnance LDA Pistol Armorer Certification Course, Rhode Island (2001).

Guest Speaker, "Firearms in the Home," Allentown Rotary Club (2001)

Mossberg Shotgun Armorer Certification Course, Lisle, IL (2001): taught course for police armorers.

Firearms Training and Qualification, Berks-Lehigh Regional Police Department (PA, 2001). Conducted user-level training for this newly-formed agency with pistol, shotgun, patrol rifle, and less lethal impact munitions.

Guest Instructor, Citizens Police Academy, Exeter Township Police Department (PA, 2001). Presented demonstration/discussion of concealed weapons and related topics.

Personal Protection Course, Carpenter Technology Corporation, Reading, PA (2001). Taught personal protection course (including pepper spray and hand-to-hand self defense) to executives of Fortune 500 company and their spouses.

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Firearms Instructor Update (Northeast Counter-Drug Training Center, Ft. Indiantown Gap, PA 2001): presented instructor-level program for Pennsylvania Municipal Police Officers Education and Training Commission.

Tacoma Police Department (WA, 2001). Developed and taught Kimber Pistol Armorer's Workshop and Kimber Pistol Instructor Course for this agency.

Las Vegas Metro Police Department (NV, 2001). Taught Mossberg Shotgun Armorer Certification Course.

Mossberg Shotgun Armorer Certification Courses (North Haven, CT 2001). Taught two armorer courses for O.F. Mossberg & Sons.

Mossberg Shotgun Armorer Certification Course (Utah County Sheriff's Office, UT 2001). Taught law enforcement armorer's course.

"Legal and Practical Aspects of Firearms Self-Defense" (Topton, PA 2001): taught course at East Penn Outdoor Sportsmen's Expo.

Para-Ordnance LDA Pistol Armorer Certification Course (North Attleboro Police Department, MA 2001).

2001 IALEFI Annual Training Conference, Reno, NV: conducted IALEFI Handgun Safety Check for some 80 students; assistant safety coordinator for this 6-day event involving nearly 400 participants; taught Mossberg Shotgun Armorer Certification Course; panelist in panel discussion, "Point Shooting vs. Aimed Fire."

Presenter at Muhlenberg Twp. Police Dept. "Firearms and Home Safety" Class (Temple, PA 2001): Lecture to mixed audience of adults and Boy Scouts.

Mossberg Shotgun Armorer Certification Course (Branson Police Department, Branson, Missouri 2001). Taught law enforcement armorer's course.

Mossberg Shotgun Armorer Certification Course, Fairfax, Virginia 2001. Taught Law Enforcement armorer's course to police and military personnel.

Para-Ordnance LDA Pistol Armorer Certif. Course (Southampton, PA 2001)

Mossberg Shotgun Armorer Certification Course, Massachusetts State Police Headquarters, Framingham, MA 2002.

Mossberg Shotgun Armorer Certification Course, Clearwater Police Department, Clearwater, FL 2002.

Beretta DAO Pistol Training Course and Use of Force Legal Issues Class, Bloomsburg University Police Department, Bloomsburg, PA 2002: Trained and certified university police department to carry firearms.

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Mossberg Shotgun Armorer Certification Course, Linn County Sheriff's
Office, Albany, Oregon 2002

Mossberg Shotgun Armorer Certification Course, Shawnee County Sheriff's
Department, Topeka, Kansas 2002.

Para-Ordnance LDA Pistol Armorer Certification Course, Kansas Highway
Patrol, Emporia, Kansas 2002.

Citizen's Police Academy, Exeter Township Police Department (PA),
Guest instructor, training segment on weapons concealability (2002-2004).

Firearms Instructor Update, Berks County Sheriff's Department,
Reading, Pennsylvania (2002)

Mossberg Shotgun Armorer Certification Course, New York City Police
Department, Ballistics Section (2002)

Introduction to Firearms for Juvenile Probation Officers, Allentown
Police Academy (2002)

Mossberg Shotgun Armorer Certification Course, Watertown Police Department,
Watertown, CT (2002)

Mossberg Shotgun Armorer Certification Course, Carol Stream, Illinois (2002)

2002 IALEFI Annual Training Conference, San Diego, CA. Chief safety
coordinator for this 6-day event involving over 300 participants in day and night
training activities, trade show, demonstrations and shooting competitions. Co-
instructed course on safety issues and procedures in simulation and role-playing
training exercises.

Mossberg Shotgun Armorer Certification Course, Martin County Sheriff's
Office, Stuart, Florida (2002).

Mossberg Shotgun Armorer Certification Course, Fairfax, VA (2002).

Bureau of Alcohol, Tobacco & Firearms, Firearms Instructor Seminar, Orlando,
FL (2002). Guest Instructor.

Berks-Lehigh Regional Police Department, remedial dim-light training. (2003)

Guest Lecturer, University of Pennsylvania class, "Injury and the Public's
Health," School of Medicine/School of Public Health. Professor Charles
Branas, Ph.D. (2003)

Patrol Rifle Instructor Course, Reading, PA (2003)

Patrol Rifle Operator's Course, Reading, PA (2003)

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Bureau of Alcohol, Tobacco & Firearms, Firearms Instructor Seminar, San Diego CA (2003). Guest Instructor.

Citizen's Police Academy, Allentown Police Academy, Allentown, PA.
Instructor in Use of Force in Law Enforcement, Laws of Arrest (2003-5)

Bureau of Alcohol, Tobacco & Firearms. Firearms Instructor Seminar, Orlando, FL (2003). Guest Instructor

IALEFI Annual Training Conference, Orlando, FL (2003). Assistant range officer in Advanced Tactical Rifle class.

Mossberg Shotgun Armorer Certification Course. Rockland County (NY) Police Academy (2003). Instructor.

Firearms Instructor Recertification Course. Atlantic County, NJ (2002, 2003). Instructor

Defensive Shotgun Course. Reading, PA (2003). Instructor

Firearms Instructor Updates/Requalifications. Berks County Sheriff's Department, Reading, PA (2003-2005).

Guest Instructor, Lehigh County Municipal Emergency Response Team Training, DeSalles University (2004)

Bureau of Alcohol, Tobacco & Firearms. Firearms Instructor Seminar, Orlando, FL (2004). Guest Instructor

Patrol Rifle Instructors Course. Reading, PA (2004). Instructor

Patrol Rifle User's Course. Reading, PA (2004). Instructor

Bureau of Alcohol, Tobacco & Firearms. Firearms Instructor Seminar, Los Angeles, CA (2004). Guest Instructor

IALEFI Annual Training Conference, Dayton, Ohio (2004). Taught class "Legal Update for Firearms Instructors."

Patrol Rifle/Shotgun Workshop. Reading, PA (2004). Instructor

Atlantic County Prosecutor's Office, Firearms Instructor Update. Atlantic County, NJ (2004). Presented 3-day range and classroom instructor update.

Lecture, "Firearms, Firearms Safety and Self-Defense," Lions Club, Bowers, PA (2004). Guest lecturer.

Defensive Handgun & Shotgun Class. Hellertown, PA (2004). Instructor

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Bureau of Alcohol, Tobacco & Firearms. Firearms Instructor Seminar, San Francisco, CA (2005). Guest Instructor

Tactical Team Commanders Course, Jefferson Township (NJ) Police Department, for Fox Valley Technical College/ Team One Network, Guest Instructor (2005).

Advanced Defensive Handgun Class. Hellertown, PA (Spring 2005). Instructor.

Firearms Safety and Tactics Workshop. Salisbury Township Police Department, Allentown, PA (2005). Instructor.

Bureau of Alcohol, Tobacco & Firearms. Firearms Instructor Seminar, San Diego, CA (2005). Guest Instructor.

2005 IALEFI Annual Training Conference, Reno, NV. Co-instructed instructor-level class on fast, accurate handgun shooting and target-focused fire. Conducted Handgun Safety Check for approx. 100 new attendees. Chief Safety Officer coordinating safety for this 6-day training conference, involving over 400 attendees in classroom and firing range courses, firearms ompetition, trade show with hands-on firearms demonstrations, etc.

Atlantic County Prosecutor's Office, Firearms Instructor Update. Atlantic County, NJ (2005). Presented 3-day range and classroom instructor update.

O.C. ("Pepper Spray") Users Courses (Pennsylvania 2005). Presented training courses for security officers of major pharmaceutical manufacturer. Patrol Rifle Operators Refresher Course (Berks County Sheriff's Dept. 2005).

Advanced Defensive Handgun Course. Hellertown, PA. (Fall 2005). Instructor.

Defensive Handgun & Shotgun Training (Pennsylvania 2005, 2006, 2007, 2008, 2009). Presented a series of firearms training courses for security officers of a major pharmaceutical manufacturer.

"Home Firearms Safety and Self-Defense" lecture/demonstration for 35th Anniversary Charter Night, Lions Club, Bowers, PA (2006).

North Carolina 2006 Police Firearms Instructors Conference, North Carolina Justice Academy (2006). Featured presenter: lectured to 250 law enforcement firearms instructors on safety in simulation training; involuntary muscular contraction and unintentional discharge of firearms; police deaths and administrative gun handling safety considerations; and mental conditioning and tactics in officer- involved shootings.

2006 IALEFI Annual Training Conference, West Palm Beach, FL. Moderator of panel discussion, "Panel of Experts on Firearms Topics," including techniques for covering suspects at gunpoint, manipulation of manual safeties, use of

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weapon-mounted lights, etc. Assisted in conducting Handgun Safety Check for participants; monitored classes on Patrol Rifle, Concealed Carry Handgun.

Allentown Police Tactical Pistol League. Conducted training session for police officers. (2006)

Patrol Rifle Workshop. Hellertown, PA. (2006)

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2006). Presented classroom and range instructor update.

IALEFI Regional Training Conference, Ocean City, Maryland (2006). "Tactical Handgun Overview." Featured instructor at regional police training conference.

"Use of Force in Law Enforcement." Two classes; Kutztown Police Department, Kutztown, PA (2007)

"Legal & Practical Aspect of Self-Defense with Firearms," Hellertown, PA (Winter 2007). Lecture/demonstration presentation to some 100 attendees.

"Use of Force Legal Concepts," Reading, PA (2007). Conducted instruction on principles of justification for use of force, etc. for Carpenter Technology security officers.

Glock Pistol Transitional Training, Eastern Armored Services (2007). Conducted transitional training classes for armored car personnel.

Pepper Spray User's Course. Conducted pepper spray user training and certification for corporate/industrial security officers. (2007)

IALEFI 2007 Annual Training Conference, San Antonio, TX. Assisted in conducting handgun safety check for 175 firearms instructors.

"Police Involved Shootings – When the Smoke Clears," Westchester County Detectives Association, Yorktown Heights, NY (2007). Lecture presentation to 160 attendees on subjects including psychological and perceptual distortions and stress reactions of officers involved in shootings; involuntary muscular contraction and accidental discharge of firearms; liability and safety issues of weapon-mounted lights and lasers; officer reluctance to fire; etc.

"Use of Force Legal Theory" class and "Glock Pistol User's Class" conducted for California University of Pennsylvania Police Department. (California, PA 2007). Consulted, and conducted classroom and range instruction for this university police department in its adoption of a service pistol.

Legal & Practical Aspects of Self-Defense with Firearms, Hellertown, PA (Fall 2007). Lecture/demonstration presentation to 30 attendees.

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course.

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Atlantic County, NJ (2007). Presented 3-day firearms instructor update (classroom and range) for approximately 30 police firearms instructors.

Pepper Spray User's Course. Conducted pepper spray user training and certification for corporate/industrial security officers. (2008, 2010)

Defensive Handgun, Shotgun and Use of Force Training (Pennsylvania 2008 - 2012). Conducted training for security officers of a major pharmaceutical manufacturer.

2008 IALEFI ATC, Reno, Nevada. Conducted IALEFI Handgun Safety Check for approximately 125 shooters on range. Taught classes on "Shotgun Instructor Skills."

Defense Training International, Women's Handgun Class. Rochester, Indiana (2008). Served as adjunct instructor for this women-only class.

"Covering Suspects at Gunpoint and Involuntary Muscular Contraction." Training segment conducted for Greene County Sheriff's Reserve (2008)

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2008). Presented 3-day firearms instructor update (classroom and range) for approximately 25 police firearms instructors.

Greene County Sheriff's Department. Assistant range instructor for dim light Handgun & rifle qualification; assisted in developing dim light rifle qualification course; provided remedial instruction as needed. (2009-2012)

"How Close is Too Close?" Training segment conducted for Greene County Sheriff's Reserve (2009)

"Ammunition Inspection Procedures," "Dry Practice Safety Procedures," and "Safety in Gun Cleaning" training segments conducted for Greene County Sheriff's Reserve (2009)

Indiana University (Bloomington, IN), Criminal Justice Department. Taught 3-credit senior seminar, "Police Use of Force." (2009, 2010)

2009 Conference, International Law Enforcement Educators & Trainers Association (Chicago, IL): taught course, "Bulletproofing Your Agency's Use of Force Policies."

2009 IALEFI Annual Training Conference, West Palm Beach, Florida. Conducted IALEFI Handgun Safety Check (range drills) for 70-plus trainees; taught course, "Management and Investigation of Officer-Involved Shootings" (two sessions).

Intermediate Defensive Handgun. Trained female student in defensive handgun skills in intensive 2-day program. Hellertown, PA. (2009)

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Remedial Handgun Training. Provided series of remedial training sessions for two female law enforcement officers. (Indiana 2009)

Police Patrol Rifle Instructor Course, Reading, PA. (2009)

Prosecutor's Training, "Police Use of Force," Greene County, IN. (2009)
Developed and presented this mandatory training course for police from agencies throughout the county.

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2009). Presented 3-day firearms instructor update (classroom and range) for approximately 35 police firearms instructors.

"Police Use of Force." Citizens' Police Academy, Linton Police Department, Indiana (2010).

Firearms Safety & Home Firearms Storage Safety; Distinguishing Toy Guns and Airguns from "Real" Guns; Dry Practice Safety Protocols; Drawing the

Handgun. Training segments conducted for Greene County Sheriff's Reserve (2010).

Moderator and Panelist, Panel Discussion: "Current Issues in Firearms & Tactics Training, 2010 IALEFI Annual Training Conference, San Antonio, TX. Also, conducted Handgun Safety Check for 120 first-time attendees.

Patrol Rifle Instructor & User's Course, Reading, PA (2010).

Police Firearms Instructor Update, Allentown (PA) Police Academy (2010).

Prosecutor's Training, "Police Use of Force Update," Greene County, IN (2010)

"Use of Force Law & Policy," Berks County (PA) Sheriff's Department (2010)

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2010). Presented two 3-day firearms instructor update courses (classroom and range) for approximately 45 police firearms instructors.

Judgmental Use of Force Training. Designed and conducted a judgmental use of force training program for law enforcement officers in Greene County, Indiana. Program utilized FATS video simulator, firearms, OC spray, Taser, verbal challenges, use of cover, verbalization with suspects and fellow officers, preparing and debriefing after writing an incident report on one of the scenarios the trainee experienced, etc. (Bloomfield, IN 2011).

Judgmental Use of Force Instructor Certification Class. Trained a cadre of instructors to teach a judgmental use of force program, including the FATS system, report writing, etc. (Bloomfield, IN 2011)

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Clearing Handgun Stoppages. Training conducted for Greene County Sheriff's Reserve (2011).

One-handed Handgun Operation. Training conducted for Greene County Sheriff's Reserve (2012)

Police Use of Force, Citizens Police Academy, Linton, IN (2012)

Panelist, Use of Force "Panel of Experts" at 2012 ILEETA Conference, Chicago.

Patrol Rifle Instructor Course, Berks County, PA (2012)

FATS Judgmental Firearms Training Program, Greene County, IN (2012).
Designed and helped to conduct FATS simulator training for law enforcement officers from countywide agencies.

IALEFI 2012 Annual Training Conference, Nashville, TN. Taught class, "The Firearms Instructor as Expert Witness."

Live-Fire Decision Making Shooting Exercises, Greene County, IN (2012).

IALEFI Shotgun Master Instructor Development Program, Monroeville, PA (2012)

Firearms Instructor Update & Recertification, Atlantic County, NJ (2012)

Legal & Practical Aspects of Self Defense With Firearms. Hellertown Sportsmen's Association, Hellertown, PA (2012)

Police Explorers firearms training class. Berks County, PA (2012)

Berks County Sheriff's Department training and qualification (2012)

North Carolina Justice Academy, Firearms Instructor Update. Lecture "Post Shooting Procedures, Policies and Concerns" (2012). Presentation to 125 firearms instructors representing law enforcement agencies statewide.

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2012). Presented two 3-day firearms instructor update courses (classroom and range) for approximately 45 police firearms instructors.

2013 IALEFI Annual Training Conference, Mobile, AL. Conducted IALEFI Handgun Safety Check for approx.. 90 attendees; Presented class: "Encouraging Off-Duty Carry."

Legal & Practical Aspects of Firearms Self-Defense. Hellertown, PA (2013)

IALEFI Regional Training Conference, Harrisburg Area Community College,

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Piccola Law Enforcement Training Center. Conference Coordinator. Taught courses, “Officer-Involved Shootings: Policies, Procedures & Concerns” and “Lethal Force Confrontations Instructor.” Assisted in presenting Tavor Rifle Armorer Level I Class. (2013)

Atlantic County Prosecutor’s Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2013). Presented two 2-day firearms instructor update courses (classroom and range) for approximately 50 police firearms instructors.

Norfolk Southern Railroad Police Training Seminar, “Bulletproofing Your Agency’s Use of Force Policy” and “Officer-Involved Shootings: Policies, Procedures and Concerns.” Brosnan Forest, SC (2014).

Deadly Force Expert Panel, 2014 ILEETA Conference, Lombard, IL. Panelist.

2014 IALEFI Annual Training Conference, Amarillo, TX. Conducted IALEFI Handgun Safety Check for approximately 90 attendees; presented class “Using Firearms Experts in Officer-Involved Shooting Cases.”

Atlantic County Prosecutor’s Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2014). Presented two separate 2-day firearms instructor update courses (classroom and range) for police firearms instructors county-wide.

Police Patrol Rifle Instructor Course. Hosted by Allegheny Township Police Department, Duncansville, PA. (2014)

2015 ILEETA Conference, Panelist, “Deadly Force Panel of Experts;” Panelist, “Active Shooter Panel.” Wheeling, IL.

2015 IALEFI Annual Training Conference, West Palm Beach, FL. Taught two classes for 76 students, “Training Gone Wrong.”

Police Firearms Instructor Course. Hosted by Martinsburg Police Department, PA. (2015)

Atlantic County Prosecutor’s Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2015). Presented 2-day firearms instructor update courses (classroom and range) for police firearms instructors county-wide.

Pilot program, “Police Use of Force,” Piccola Law Enforcement Training Center, Harrisburg Area Community College (2015). Co-instructed this pilot program for mandatory in-service training class to be presented in 2016 to approximately 25,000 police officers throughout the Commonwealth of Pennsylvania.

IALEFI Regional Training Conference, Freeport Police Range, Long Island, NY (2015). Taught two instructor-level classes on current law enforcement use-of-force issues and cases. Classes attended: see above.

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MPOETC Instructor Training Class for 2016 Mandatory In-Service Training (“MIST”) “Police Use of Force” Class. Co-instructed this instructor-training class for the Pennsylvania MPOETC for approximately 40 instructors at the Montgomery County Law Enforcement Training Center, Conshohocken, PA (2015).

Basic Defensive Handgun Course, Hellertown, PA 2016.
“Deadly Force Panel of Experts” panelist, 2016 ILEETA Conference, Rosemont, IL.

Moderator and Panelist, Panel Discussion, “Firearms Training and Use of Deadly Force,” 2016 IALEFI Annual Training Conference, Mobile, AL.

Atlantic County Prosecutor’s Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2016). Presented two 2-day firearms instructor update courses (classroom and range) for police firearms instructors county-wide.

Civilian Response to Active Shooter Events (CRASE) Training, Lehigh Valley Consortium of Professional Organizations (2016) Presented this Texas State University program for approximately 40 attendees.

Use of Force and Firearms Training, Upper Macungie Township Police Department, Pennsylvania. Provided classroom and range instruction for this municipal police department (2016).

Firearms Instructor Workshop and Remedial Handgun Training for Northampton County Sheriff’s Department, Pennsylvania (2016).

Rangemaster Tactical Conference, lecture presentation, “Use of Force Legal Cases: Lessons Learned.” Little Rock, Arkansas (2017).

“Deadly Force Panel of Experts” panelist, 2017 ILEETA Conference, St. Louis, MO.

“Patrol Rifle Panel” panelist, 2017 ILEETA Conference, St. Louis, MO.

North Carolina Justice Academy, IALEFI Regional Training Conference, lecture presentation, “Officer-Involved Shootings: When Tiny Details Become Critical,” 2017.

IALEFI 2017 Annual Training Conference, West Palm Beach, FL. Lecture presentation, “Legal Update on Officer-Involved Shootings: The Expert Witness Viewpoint.”

Armed Security Officers Training Program, Reading, PA. Classroom and range training for two groups of armed security officers for Reading Hospital/Reading Health System. (2017)

Patrol Rifle Instructor Course, hosted by Muhlenberg Township Police

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Department, Reading, PA. (2017)

Firearms training and consulting for church security team. Berks and Lehigh County, PA 2017-2021.

Use of force and firearms training and consulting for synagogue security team. Lehigh County, PA 2017-2021.

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ (2017). Presented firearms instructor update course (classroom and range) for police firearms instructors county-wide (two classes) 2017.

"Deadly Force Panel of Experts" panelist, 2018 ILEETA Conference, St. Louis, MO.

"Active Shooter Panel" panelist, 2018 ILEETA Conference, St. Louis, MO.

"Review of Recent Officer-Involved Shootings," IALEFI ATC, Houston, TX 2018.

Patrol Rifle Instructor Course for Assistant Chief of Upper Macungie Township Police Department, 2017-2018 (multiple sessions).

Pepper gel classes, taught for security team members of religious congregations. (2018, 2019)

Class on tactical first aid, including use of Israeli battle dressings, tourniquets, Combat Gauze, and occlusive dressings, taught for teachers and staff of religious congregation. (2018)

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ. Presented two firearms instructor update courses (classroom and range) for police firearms instructors county-wide (2018).

Pepper gel class, taught for employees and family members of professional firm. (2018)

IALEFI ATC, West Palm Beach, FL (2019): Taught instructor-level course on "Officer-Involved Shootings" to approximately 35 instructors.

Firearms training and tactical first aid classes, taught to security group of religious congregation in Allentown, PA (2019)

Active Shooter/Left of Bang: Coordinated and assisted in two large lecture presentations on these subjects at Trexlertown, PA, and at Harrisburg Area Community College, Law Enforcement Training Complex for approximately 100 attendees each, with lead lecturer Don Alwes (2019).

Curriculum Vitae:
Emanuel Kapelsohn
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Active Shooter/Left of Bang: Hellertown, PA. Hands-on active shooter response class, Airsoft simulation scenarios and live fire training, co-instructed with Don Alwes. (2019)

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ. Presented firearms instructor update courses (classroom and range) for police firearms instructors county-wide, two sessions (2019).

Active Shooter Preparation and Response: St. John's Church on Morgan Hill, Easton, PA. Presentation to Consistory Group (2019)

Active Shooter Response and the Law: Presentation for Allentown Barrister's Inn (attorneys, prosecutors and judges). PACLE Credit-approved. (2019)
"Firearms Safety, Legal Justification for Use of Force, and Policy" presented for approximately 30 members of church security team. Allentown, PA (2020)

Pepper gel training, presented for staff and religious school teachers of a house of worship. Allentown, PA (2020)

M4 Carbine Use of Cover and M9 Pistol Training for military personnel at Fort Myer (Joint Base Myer – Henderson Hall), VA (2020)

Police Firearms Instructor Course, Berks County, PA. Hosted by Berks County Sheriff's Office. (2020)

Defensive Handgun and Patrol Rifle, Defense Training International, Sussex, NJ October 2020. Assisted in teaching this course. (John Farnam, chief instructor)

Defensive Handgun Training/Qualification for members of house of worship security team. Berks County (2020).

Police Firearms Instructor Course, Blair County, PA. Hosted by Martinsburg Police Department (2020).

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ. Presented firearms instructor update courses (classroom and range) for police firearms instructors county-wide, two sessions (2020).

Classroom and range defensive handgun training for security officers of a mining operation. Pennsylvania (2021).

"Firearms Safety, Legal Justification for Use of Force, and Policy" presented for approximately 35 members of church security team. Allentown, PA (2021)

"Training an Armed Congregant House of Worship Protective Team," "Active Shooter Discussion Panel" (panel member), and "Deadly Force Discussion Panel" (panel member), ILEETA Annual Conference, St. Louis, MO (2021)

Curriculum Vitae:
Emanuel Kapelsohn
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DTI Defensive Handgun Course, Sussex, New Jersey (2021). Served as an Assistant Instructor in this 2-day program for 27 attendees.

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ. Presented firearms instructor update courses (classroom and range) for police firearms instructors county-wide, two sessions (2021).

Defensive Handgun for House of Worship Protective Team Members, Allentown, PA (2022). Lead instructor.

IALEFI Annual Training Conference, Las Vegas, NV (2022). Conducted Safety Check for Attendees. Courses attended, see above.

Firearms Video Simulator Training, Lead Instructor, 3 days, for 35 police and security officers, Allentown, PA (2022)

Defensive Handgun Training and Qualification for house of worship security team members, Lead Instructor, Tipton, PA (2022)

Armed Security Officers Training Program, Lehigh County, PA. Wrote Firearms and Use of Force Policy, Designed Training Program, and conducted classroom and range training for armed security officers of large, multi-state public utility company (2020-2022)

DTI Urban Rifle Course, Sussex, NJ, Adjunct Instructor (2022)

Atlantic County Prosecutor's Office, Firearms Instructor Recertification Course. Atlantic County, NJ. Presented firearms instructor update courses for police firearms instructors county-wide, two sessions (2022).

Defensive Handgun Training and Qualification for house of worship security team members, Lead Instructor, Tipton, PA (2023)

IALEFI Annual Training Conference, Houston, TX (2023). Conducted Handgun Safety Check for Attendees. Courses attended, see above.

Handgun Qualification/Use of Force Refresher Corporate Security Officers, Allentown, PA (2023)

Handgun Qualification/Use of Force Refresher for Estate Security Officers, Tipton, PA (2023)

Plus, numerous basic through advanced and remedial training sessions for individual students and small groups, including private individuals, corporate executives and dignitaries, executive protection personnel, security officers, private investigators, military, federal agents and law enforcement officers at all levels. (1978 to present)

Curriculum Vitae:
Emanuel Kapelsohn
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REFERENCES: Personal and professional references available on request.

EXHIBIT "2"

11/18/2019

Pregnant Florida mom uses AR-15 to kill home intruder

Pregnant Florida mom uses AR-15 to kill home intruder

By Joe Tacopina

November 4, 2019 | 12:05am | Updated



Shutterstock

A pregnant woman is credited with saving the lives of her husband and daughter after she used an AR-15 to fatally gun down a home intruder, a report said.

The hero mom sprung into action when two intruders entered the family's Lithia, Fla. home last week and pistol whipped her husband while violently grabbing their daughter, according to the Hillsborough County Sheriff's Office.

"They came in heavily hooded and masked," the husband, Jeremy King, told *Bay News 9*.

"As soon as they had got the back door opened, they had a pistol on me and was grabbing my 11-year-old daughter."

The robbers then pistol-whipped King and kicked him while the man's wife, who is eight months pregnant, retreated into the bedroom.

"When he came toward the back door in her line of sight, she clipped him," King told the outlet. "He made it from my back door to roughly 200 feet out in the front ditch before the AR did its thing."

11/18/2019

Pregnant Florida mom uses AR-15 to kill home intruder

5890

Police said in a press conference that they found the man's dead body lying in the ditch nearby. The second suspect was on the loose.

The homeowner said he took a "severe beating," but credited his wife for saving him.

"I've got a fractured eye socket, a fractured sinus cavity, a concussion, 20 stitches and three staples in my head," said King.

"Them guys came in with two normal pistols and my AR stopped it. [My wife] evened the playing field and kept them from killing me."

The sheriff's office added that the firearm was in the home legally.

FILED UNDER FLORIDA, HOME INVASION

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EXHIBIT "3"



WEATHER ALERT

Weather Alert: A cold front is moving through the region.

NEWS

Deputies: 30 rounds fired from AR-15 in deadly Florida home invasion

Incident stemmed from ongoing feud between two groups, investigators say

Garrett Pelican, Digital executive producer

Published: Apr. 17 2018, 7:16 pm

Updated: Apr. 17 2018, 7:20 pm

Tags: Florida, Baker County, Weird News, News, Glen St Mary



(Left to right: Bell, Watkins, Coyden Lauramore, Albino)



GLEN ST. MARY, Fla – Three men say they were asleep inside a mobile home in Glen St. Mary about 4 a.m. Sunday when they heard a voice outside yell "Sheriff's Office!" before the front door burst open.

In stormed a masked gunman who fired off a single round before two of the men inside, one armed with an AR-15 rifle and the other with a handgun, emerged from two bedrooms and opened fire.

Gunfire ripped into the masked gunman and two other intruders, who crumpled to the floor with multiple gunshot wounds.

11/18/2019

Deputies: 30 rounds fired from AR-15 in deadly Florida home invasion

5896

Those details surfaced Tuesday when the Baker County Sheriff's Office released an arrest report linked to [this weekend's home invasion turned deadly triple shooting](#).

Five people are charged in the case. Investigators suspect the home invasion escalated from an ongoing feud between two groups that was stoked by social media threats.

The victims told deputies they acted in self-defense when they turned their guns on the intruders, with one of them estimating he fired over 30 rounds from an AR-15 before the threat was over.

Afterward, the victims retreated to another part of the home before they dialed 911, according to the report. None of them was hurt during the shooting.

The same cannot be said for the intruders, [several of whom were inside a vehicle deputies intercepted as it sped away](#) from the mobile home off County Road 125.

One of them, Corey Lauramore, died of gunshot wounds to the head. An unidentified 16-year-old remains hospitalized, and a third suspect, William Lauramore, was treated and released to police.

Investigators found a heavy amount of dried blood caked on the front steps of the home, a bloodstained mask with a bullet hole through it and a .380 caliber handgun lying nearby, the report said.

They also recovered an AR-15 rifle and a 9MM handgun inside the home.


The Sheriff's Office said the [five individuals charged in the case were among a group of seven that went to the mobile home that morning to confront and fight](#) the group staying there.

William Lauramore, 24; Joseph Albino, 24; Zachary Bell, 20; Christian Watkins, 19; and Cayden Lauramore, 15, are charged with home invasion. But additional charges are possible.

Albino, Bell and Watkins provided conflicting details about their involvement in the shooting, but all three said they had no idea others in their group had brought weapons along, according to the report.

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EXHIBIT "4"

Man armed with AR-15 stops attack by neighbor in Oswego

POSTED 5:37 AM, FEBRUARY 27, 2018, BY NANCY LOO AND CHARLES HAYES, UPDATED AT 12:59PM, FEBRUARY 27, 2018



This is an archived article and the information in the article may be outdated. Please look at the time stamp on the story to see when it was last updated.

Man armed with AR-15 stops attack by neighbor in Oswego



OSWEGO, Ill. -- A man armed with an AR-15 rifle helped stop a knife attack during an argument in Oswego.

It happened on Monday at an apartment building on Harbor Drive.

Police say it all began when someone with a knife attacked another person during an argument.

Neighbor Dave Thomas, who witnessed the attack, went into his home, got his rifle and ordered the suspect to stop.

"I ran back into the home, into my house and grabbed my AR-15. Grabbed the AR-15 over my handgun. It's just a bigger gun. I think a little bit more than an intimidation factor definitely played a part in him actually stopping."

No shots were fired.

The suspect was able to get away briefly, before police captured him.

The stabbing victim was taken to a hospital, and is expected to recover. 5896

Police say Thomas has a valid firearm owner's identification card and a concealed carry permit. Thomas says he is also a firearms instructor.

"The AR-15 is my weapon of choice for home protection," Thomas said. "It's light, it's maneuverable. If you train and know how to use it properly, it's not dangerous. And this is just a perfect example of good guy with an AR-15 stopped a bad guy with a knife. And there were no lives taken, so all in all it was a good day."

NEWS

Pregnant mom used AR-15 to kill burglar, save husband during home invasion

NEWS

EXHIBIT "5"

THE AUTHOR

POLITICS & POLICY

Texas Hero Reportedly Used His Own AR to Confront the Sutherland Springs Shooter

By DAVID FRENCH | November 6, 2017 10:54 PM

During today's press conference about the Texas mass shooting, the regional director of the Texas Department of Public Safety indicated that the Texas Good Samaritan, Stephen Willeford, **engaged the Sutherland Springs shooter with his own AR:**

He armed himself with an AR assault rifle and engaged the suspect. They engaged in gunfire here at the church. We know that the suspect was shot, when he dropped his assault rifle and jumped in his Ford Expedition and fled the scene.

Given what we know from other reports, this makes a great deal of sense. After all, Willeford apparently fired with a great deal of precision. **Here's an account from CNN**, taken from an interview of his cousin:

And what he did, according to his cousin, is exchange fire with the gunman, hitting him in the side and twice in the neck.

"He saw that the guy was wearing body armor, and there was a velcro strap, from the back to the front," detailed Leonard, speaking live on Monday. "He knew from that ... that the vulnerable spot was going to be in the side. And so that's where he shot him."

An AR is an easy-to-use, extraordinarily accurate weapon, and one can see how it would enable a surprised civilian to engage the shooter so quickly and effectively.

We keep hearing that AR's are useless for self-defense, that they're simply "weapons of war," useful only for mass killing. This is simply not true. **Earlier this year**, an Oklahoma man used an AR-15 to kill three home intruders, and multiple self-defense experts have long pegged AR-style rifles as their **"home defense weapon of choice."** I have one in my own home, and I feel far more comfortable using it than even one of my handguns.

While Willeford obviously didn't prevent the massacre, he did stop the shooter and prevented him from harming anyone else. He did so with exactly the kind of weapon that the gun control lobby would like to deny to law-abiding Americans. That's a fact worth noting.

11/18/2019

Texas Hero Reportedly Used His Own Gun to Confront the Sutherland Springs Shooter | National Review



RETURN TO THE CORNER



DAVID FRENCH is a senior editor of *The Dispatch*. [@davidafrench](#)

EXHIBIT "6"

11/18/2019

Harris County deputy's son shoots one of two intruders - Houston Chronicle

<https://www.chron.com/news/houston-texas/article/Harris-County-deputy-s-son-shoots-one-of-two-1712908.php>

Harris County deputy's son shoots one of two intruders

15-year-old and sister, 12, were alone when pair entered, so he got dad's rifle

MIKE GLENN

HOUSTON CHRONICLE Published 5:30 am CDT, Wednesday, June 30, 2010

The teenage son of a Harris County deputy constable opened fire with his father's automatic rifle Tuesday after burglars forced their way into the family's home, authorities said.

The boy, 15, and his sister, 12, were alone about 2:30 p.m. when they heard glass breaking downstairs at the home in the 2600 block of Royal Place Court in northwest Harris County.

The boy went downstairs with the rifle and spotted the two burglars in the living room.

He fired several shots and struck one of the intruders, said Lt. Jeff Stauber with the Harris County Sheriff's Office.

"He was concerned with protecting his younger sister — that's exactly what he did," Stauber said.

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The suspect who was shot -- identified as Kinzy Evans, 17, -- was struck several times by gunfire. Police said his accomplice was a 16-year-old who they would not identify because he is a juvenile.

Sheriff's investigators were tipped off when the suspected burglars quickly showed up at Methodist Willowbrook Hospital.

"Anytime you get a gunshot victim in the hospital, they're going to notify law enforcement," Stauber said.

11/18/2019

Harris County deputy's son shoots one of two intruders - Houston Chronicle

Evans was taken by Life Flight helicopter to **Memorial Hermann-The Texas Medical Center** in unknown condition.

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Sheriff's deputies said the burglars came into the house after breaking out a window in the living room area.

"They left the same way they came in - through the broken window," Stauber said.

'A little shaken up'

Family members at the scene declined to comment about the incident.

"The main thing is that the kids are OK. They're a little shaken up," said a man who identified himself as the deputy constable's brother.

Neighbors said several homes in the area also have been broken into during the daylight hours.

"There have been a lot of robberies. It's good that they caught them," said **Ushantha Kawmini**, whose home down the street was burglarized about a month ago.

Break-in concerns

Another neighbor was concerned that the burglars would be brazen enough to break into a home belonging to a law enforcement officer.

"Now they're doing it to the police officers. What about regular people?" said the neighbor.

She identified herself only as Mary because she feared retaliation from other burglars.

"I'm sure they (the suspects) have got friends," the neighbor said.

The two have been charged with burglary of a habitation, officials said.

mike.glenn@chron.com

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HEARST

EXHIBIT "7"

The Philadelphia Inquirer

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NEWS SPORTS BUSINESS OPINION POLITICS ENTERTAINMENT LIFE FOOD HEALTH REAL ESTATE OBITUARIES Q

Elkins Park man killed after forcing his way into apartment

by Sam Wood, PHILLY.COM, Posted: April 22, 2013



An Elkins Park man was killed late Friday after he forced his way into a stranger's apartment in Cheltenham Township.

Jasper Brisbon, 32, wandered up to a couple late Friday at the Lynnewood Apartments as the pair spoke outside their unit. Brisbon, they told police, appeared to be on drugs. He stared at the pair for several minutes before the couple decided to go into their apartment, police said.

But as they entered their home Brisbon jumped between them, forcing his way in.

The male of the couple ran to get a semi-automatic AR-15 rifle and insisted Brisbon leave. Brisbon refused. Instead, as the man yelled "Stop! Stop Stop!" Brisbon moved menacingly toward the man, police said.

The man fired a shot striking Brisbon in the torso and immediately called 911, police said.

An ambulance rushed Brisbon to Abington Memorial Hospital where doctors pronounced him dead. According to court records, Brisbon was awaiting trial on a charge of aggravated assault stemming from an incident in December.

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Police said the residents of the apartment were cooperating with police, did not know Brisbon and that the AR-15 was legally purchased.

Contact Sam Wood at 215-854-2796, @samwoodiii or samwood@phillynews.com

Posted: April 22, 2013 - 1:46 PM

Sam Wood, PHILLY.COM

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EXHIBIT "8"

https://www.tulsaworld.com/communities/wagoner/news/shooting-deemed-justifiable-authorities-say-zach-peters-acted-lawfully-when/article_ad51c988-72d3-556f-be54-6c9404a5fbab.html

Shooting deemed justifiable: Authorities say Zach Peters acted lawfully when he shot, killed three intruders

By JOSH ALLEN Staff Writer Apr 3, 2017

1 of 3



First Assistant District Attorney Jack Thorp told reporters Zach Peters acted "lawfully," within "his rights as an Oklahoma citizen," when he shot and killed three masked intruders with an AR-15 inside his home after they broke in on Monday, March 27. JOSH ALLEN/AMERICAN-TRIBUNE

Related content

Audio: Listen to edited version of audio of the 911 call

Alleged getaway driver in home invasion triple homicide reportedly knew man who shot 3 teens

VIDEO: 911 call released: Man who fired AR-15 on teen intruders tells dispatcher 'I shot two of them'

The latest: Friends in disbelief over deaths of three teens during home-invasion

11/18/2019

Shooting deemed justifiable: Authorities say Zach Peters acted lawfully when he shot, killed three intruders | News | tulsaworld.com

Woman arrested after Broken Arrow-area man fatally shoots three intruders

Wagoner County officials said Monday the 23-year-old who shot and killed three masked intruders inside his home on March 27 acted justifiably and would not be charged with any crime.

At a press conference on Monday, First Assistant District Attorney Jack Thorp read an official letter from the DA's office, which said Peters "acted in accordance with his rights as an Oklahoma citizen."

The DA's office sent the official letter declining to prosecute or pursue any charges against Peters to the Wagoner County Sheriff's Office on Monday, April 3.

"Upon my review of his interview, it appears that he (Peters) was in fear for his life as he perceived the intruders and discharged his weapon at the intruders," District Attorney Brian Kuester states in the letter.

Kuester concludes Peters acted in accordance with the Oklahoma statute entitled Physical or Deadly Force Against Intruder (21 O.S. 1289.25).

"My deputies have worked tirelessly on this case ever since it happened to make sure we do a good job," Wagoner County Sheriff Chris Elliott said Monday. "They've investigated this meticulously, diligently, and we've looked at every piece of evidence."

Thorp said at Monday's press conference that Elizabeth Marie Rodriguez, 21, who was arrested for her involvement in the home invasion and subsequent deaths, has officially been charged with three counts of first-degree murder by the DA's office.

The range of punishment for murder in the first degree, Thorp said, includes three possible punishments; death, life without the possibility of parole or life.

She also faces a first-degree burglary charge and a second degree burglary charge, according to court records.

"Like every other jurisdiction in the country, we too have seen burglaries ... an increased number of burglaries happening in Wagoner County," Elliott said. "We are working diligently with other law enforcement agencies and the community to try and thwart these burglaries."

11/18/2019

Shooting deemed justifiable: Authorities say Zach Peters acted lawfully when he shot, killed three intruders | News | tulsaworld.com

5908

Rodriguez was arrested after she turned herself in to authorities shortly following the home invasion and shooting. She stated to investigators that she had “planned the robbery and drove the vehicle,” according to authorities.

On Thursday, she told reporters in an interview from the jail that she was sorry for her part in the crime, claiming she did not plan to kill any of them but did admit to her part in the robbery attempt.

Jaykob Woodruff, 16, Jacob Redfearn, 17, and Maxwell Cook, 19, were wearing all-black and masks when they broke into Peters’ home on Monday, March 27 around noon.

After hearing loud noises that woke Peters, who was at the home alone at the time, he encountered the three intruders inside his home. Armed with an AR-15 assault rifle, Peters fired, killing all three.

Authorities said one was armed with brass knuckles and another had a knife.

“At the sheriff’s office, we’re very troubled by this. We don’t want to see this in our county,” Sheriff Elliott said. “But we support the right of our citizens ... the right to bear arms and to defend their homes in this county.”

“In this such, we feel strongly that that’s what took place here,” he continued. “We don’t want to see this type of thing in our county, obviously, but we are also in the United States and in a state that affords our citizens the right to defend themselves.”

Within minutes of firing the shots, Peters called 911 and requested medical personnel for the wounded intruders, telling the dispatcher “one of ‘em’s shot bad.”

“Our condolences are extended to the families (of Woodruff, Redfearn and Cook)” Thorp said on Monday.

Originally it was reported that Rodriguez may have personally known Peters, however, she confirmed to authorities last week that “she had no connection” with him, according to Deputy Nick Mahoney, spokesman for the sheriff’s office.

After waiving her right to an attorney, Rodriguez told investigators Wednesday that “she did not know Zach Peters,” but said she “indirectly became aware of Peters’ father.”

“She said she determined Peters had money and expensive belongings, and that was why she selected his home, to ‘hit a lick,’” Mahoney said.

“Hit a lick,” Mahoney explained, “is a term some criminals use to describe getting a significant amount of money in a short period of time.”

An arrest affidavit had previously indicated that Rodriguez “had previous knowledge of the house and the homeowner.”

After Peters shot the intruders, who had broken in through a back glass door, two of them died inside, while one made it out to the driveway before collapsing.

Rodriguez told investigators that, after she heard shots fired, the injured suspect who ran outside tried to get back into her vehicle, but she said she drove away, leaving him in the driveway, Mahoney said.

Rodriguez also told investigators that she and the three deceased suspects had went to the residence prior to the shooting and burglarized a spare apartment on the property. She said they then returned later to burglarize the main house, Mahoney said.

Another witness contacted authorities last week with alleged additional information regarding the home invasion, according to Mahoney.

“Investigators have made contact with her and are currently in the process of talking with her,” Mahoney said last week.

Though specific details about what she knows about the case were not revealed, he said investigators were “taking her seriously.”

“She is a witness, not a suspect,” Mahoney clarified.

Her name is not being released at this time. At Monday’s press conference, authorities did not comment on her involvement or the information she may have provided to investigators, but Sheriff Elliott said she was a juvenile.

“We’re not going to release any information on that,” Elliott said referring to the witness, who may have been in the back seat of the car that Rodriguez drove to the residence prior to the home invasion. “This case is still an open investigation.”

Rodriguez will go before Associate District Judge Dennis Shook on April 5 for an initial appearance hearing.

11/18/2019

Shooting deemed justifiable: Authorities say Zach Peters acted lawfully when he shot, killed three intruders | News | tulsaworld.com

5910

MORE INFORMATION

Autopsy reveals drugs in two of three teens killed in Wagoner County home invasion

EXHIBIT "9"

About .223 Penetration

Detailed Information Regarding Penetration Of .223 Ammunition

by R.K. Taubert

About the author: A recently retired FBI Agent with over 20 years experience in SWAT and Special Operations, he conducted extensive counter-terrorism and weapons research while in the Bureau.

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Close Quarter Battle Reputation

Several interesting but inconclusive articles examining the feasibility of the .223 caliber, or 5.56x45mm round, for CQB events, such as hostage rescue and narcotics raids, have recently been featured in a variety of firearms and police publications. However, for more than 20 years, conventional law enforcement wisdom generally held that the .223 in any configuration was a deeply penetrating round and, therefore, totally unsuited for CQB missions in the urban environment. Partly because of this erroneous, but long held perception, and other tactical factors, the pistol caliber submachine gun (SMG) eventually emerged as the primary shoulder "entry" weapon for the police and military SWAT teams.

Although new revelations about the .223 are beginning to slowly circulate throughout the Special Operations community, a number of law enforcement agencies are in the process of acquiring the next generation of "advanced" SMGs in 10mm and .40 S&W calibers. Could they and the public be better served by a .223 caliber weapons system and at less expense? Please read on and judge for yourself.

FBI Ballistic Tests

As a result of renewed law enforcement interest in the .223 round and in the newer weapons systems developed around it, the FBI recently subjected several various .223 caliber projectiles to 13 different ballistic tests and compared their performance to that of SMG-fired hollow point pistol bullets in 9mm, 10mm, and .40 S&W calibers.

Bottom Line: In every test, with the exception of soft body armor, which none of the SMG fired rounds defeated, the .223 penetrated less on average than any of the pistol bullets.

These tests were conducted by the FBI's Firearms Training Unit (FTU), at the request of the Bureau Tactical and Special Operations personnel. Located at the FBI academy in Quantico, VA, this is the same unit with the encouragement of forensic pathologist Dr. Martin Fackler and other ballistic experts, that dramatically advanced the testing of modern handgun rounds to estimate their wounding effectiveness and potential lethality. Ultimately, this entity confirmed that permanent crush cavities, or "wound-channels," and deep penetration were the primary factors for handgun-fired projectiles. The FTU further determined that under various target engagement circumstances, a depth of penetration in soft tissue of between 12 to 18 inches was required for a handgun bullet to be effective.

Equipment Employed / Rounds Tested

For these series of tests the following firearms, ammunition and equipment were employed:

About .223 Penetration

- Sealed, match grade test barrel to determine 25 yard, 10-shot group accuracy and 20-round velocity potential.
- 20" barreled, M16A1 rifle to stabilize and test rounds ranging from 40 to 55 grains in weight.
- 20" barreled, M16A2 rifle to stabilize and test rounds ranging from 62 to 69 grains in weight.
- Oehler Model 85 chronograph.
- Ransom type rifle rest, with laser bore sighting.
- Numerous blocks of Kind and Knox 250-A, 10% gelatin, to simulate living tissue.
- Federal's 40-grain "Blitz" hollow point, 55-grain soft point and 69-grain hollow point; 9mm 147-grain Hydra-Shok, 10mm and .40 S&W 180-grain, jacketed hollow points.
- Winchester's 55- and 62-grain full metal case, NTO-military spec. rounds.

As indicated, both rifles were fired from a mechanical rest. Ten-shot groups and 20-round velocity tests were fired for each round. 13 penetration tests were conducted. 95 rounds were fired for each type of round tested. A total of 760 rounds were tested and recorded for this project.

Test Protocol

Tests 1-6:

Bare gelatin, heavy clothing, automobile sheet metal, wallboard, plywood, and vehicle windshield safety glass, were shot a distance of 10 feet from the muzzle. The vehicle safety glass was set at an angle of 45 degrees to the horizontal, with the line of bore of the rifle/SMG offset 15 degrees to the side resulting in a compound angle of impact for the bullet upon the glass, which simulates a shot directed at the driver of a car closely missing the shooter. Furthermore, the gelatin was covered with light clothing and set back 18 inches behind the glass. All gelatin blocks, with the exception of the body armor barrier, were set 18 inches behind each solid obstacle shot.

Tests 7-13:

All involved shots through heavy clothing, safety glass and bare gelatin at 50 to 100 yards, concluding with internal walls, external walls and body armor at 10 feet. Test eight however, involved safety glass at 20 yards, shot dead-on, without the 15 degree offset, to simulate a shot at a car's driver bearing down on the shooter.

For the convenience of the reader, test results are summarized in the following chart. Please note that the data displayed represents the average penetration of these rounds as measured in 10% ballistic gelatin (see tables 1 and 2).

Considering that the average person's torso is 9 inches thick, front to back, all the .223 rounds ranging in weight from 55 to 69 grains appear to be adequate performers on soft targets where frontal shots are involved. Although the majority of target engagements are frontal, profile shots can and do occur. A .223 round that is required to pass through an arm before entering the rib cage mat, upon striking bone, fragment, and while possibly shattering the appendage, would most likely not be successful in producing a sufficiently deep body cavity wound to be decisive. In this, as with any CQB encounter, "controlled pairs" or rapid-repeat hits may be

About .223 Penetration

required to ensure target neutralization.

Defeating Ballistic Garments

Soft body armor appears to have little effect on the caliber's ability to penetrate and actually seemed to enhance the 40-grain Blitz's depth of penetration in soft tissue.

From a law enforcement standpoint, the ability of the .223 caliber round to defeat soft body armor, military ballistic helmets and many ballistic shields is a "double-edged sword." The criminal use of body armor is rare, but increasing. Possessing the ability to penetrate an adversary's protective vest is obviously desirable. However, this round will also defeat law enforcement vests, so great care must be exercised in laying out and observing fields of fire in training and during operations. With this concern over potential fratricide in mind, voices have been raised in some quarters regarding this bilateral tactical attribute. A number of veteran officers strongly embrace the traditional concept that a department's duty rounds should not exceed the capabilities of their vests. Arguably, this is a sound approach for any law enforcement agency to take for its non-tactical response personnel. However, SWAT, because of its specialized missions, may be a different matter and this latter concern, while important, should not dominate the rationale supporting weapons selection by highly competent tactical units.

Although it has been reported that less than 1% of all serious crimes involve long guns and less than 8% of long gun related crimes involve rifles, law enforcement is being confronted more frequently by criminals with weapons and munitions that are capable of defeating all but the heaviest ballistic protection. The FBI's Uniform Crime Reporting Section indicates, for example, that rifles were involved in 13% of the assaults on police officers during 1992. The incident at Waco, Texas, is a recent example of this problem. For forced entry teams, the need for higher levels of ballistic protection is essential.

For safe training of specialized law enforcement teams, the development of a lead-free, low penetration, short-range 5.56mm/.223 caliber training round that will (1) not penetrate ballistic vests and helmets, (2) destroy "shooting house" walls, (3) crater, or perforate steel-reactive targets, is extremely important. Fortunately, it appears that private industry is responding to these demands and such munitions are currently being developed.

Vehicle Interaction

With the exception of the full metal case and the 69-grain JHP rounds, it appears inadvisable to select lighter weight, soft or hollow point versions of this caliber when automobiles are likely to be engaged during planned raids and arrests. Penetration against automobile windshield safety glass is generally very poor and is only slightly better on sheet steel. Although terrorists from the insurgent New Peoples' Army were able to blast their way through an armored limousine in the Philippines and murder a highly regarded U.S. military official with concentrated M-16 rifle fire, the SMG-fired pistol round demonstrates at least a theoretical, if not practical, edge against such hardened targets.

Interestingly, while penetration on auto glass and sheet steel is marginal, .223 projectiles will readily perforate and breach mild steel such as standard pepper poppers, that pistol rounds will

About .223 Penetration

only slightly dimple. However, very little of the .223's mass is retained, so after defeating mild steel, significant wound potential is severely diminished upon exit.

Barriers and Structures

The Bureau's research also suggests that common household barriers such as wallboard, plywood, internal and external walls are also better attacked with pistol rounds, or larger caliber battle rifles, if the objective is to "dig out" or neutralize people employing such object as cover or concealment. Although it is usually not advisable to fire at targets you can't see in urban settings, it is done and some subjects have been stopped in this manner. Conversely, the ability of some pistol rounds to penetrate barriers tested puts innocent bystanders and fellow team members at greater risk in CQB scenarios. If an operator misses the intended target, the .223 will generally have less wounding potential than some pistol rounds after passing through a wall or similar structure. The close range penetration tests conducted indicated that high velocity .223 rounds were initially unstable and may, depending on their construction, disintegrate when they strike an object that offers some resistance. When concrete, brick or macadam are struck at an angle at close range, .223 rounds tend to fragment or break up, and ricochets are generally less hazardous. The .223 could consequently be considered safer for urban street engagements, because of its inherent frangibility within the cross-compartments created by street environments. In other words, in most shootings, the round would probably strike something, hopefully a hard object, break up and quickly end its potentially lethal odyssey.

As a point of interest, the rifled shotgun slug, while not possessing the .223's flat trajectory, is still capable of attaining a maximum range of 900 yards. This fact illustrates that any errant law enforcement round regardless of caliber, or maximum range, is potentially dangerous to the community.

.223 Wounding Characteristics

Ballisticians and Forensic professionals familiar with gunshot injuries generally agree that high velocity projectiles of the .223 genre produce wounds in soft tissue out of proportion to their calibers, i.e. bullet diameter. This phenomenon is primarily attributed to the synergistic effects of temporary stretch cavity (as opposed to the relatively lower velocity stretching which typifies most pistol rounds) and bullet fragmentation on living tissue.

Distinguished forensic pathologist Dr. Martin L. Fackler, observed when he was conducting wound research for the U.S. Army several years ago ("Wounding Patterns of Military Rifles," International Defense Review, Volume 22, January, 1989), that in tissue simulants such as ballistic gelatin, the 55-grain, M-193 military bullet lost stability, yawed (turned sideways) 90 degrees, flattened and broke at the cannelure (groove around the bullet into which the cartridge case is crimped) after penetrating about four to five inches. The forward portion of the bullet generally remained in one piece, accounting for 60% of its original weight. The rear, or base portion of the bullet, broke into numerous fragments that may also penetrate tissue up to a depth of three inches. Dr. Fackler also noted that a relatively large stretch cavity also occurred, violently stretching and weakening tissue surrounding the primary wound channel and its effect was augmented by tissue perforation and further weakening by numerous fragments. An enlarged permanent cavity significantly larger than the bullet diameter resulted by severing

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and detaching tissue pieces. However, as the range increases, the degree of bullet fragmentation and temporary cavitation decreases because terminal velocity diminishes. At 100 meters, Fackler observed that the bullet, upon penetrating tissue, breaks at the cannellure, forming two large fragments. However, beyond 200 meters, it no longer loses its integrity, although flattening continues to somewhat occur out to 400 meters.

In his study, Fackler remarked that in abdominal shots, "There will be increased tissue disruption (beyond the bullet diameter wound channel) from the synergistic effect of the temporary cavitation acting on tissue that has been weakened by bullet fragmentation. Instead of observing a hole consistent with the size of the bullet in hollow organs such as the intestines, we typically find a void left by missing tissue up to three inches in diameter." However, "unless a extremity (peripheral hit) is sufficiently thick like a thigh, or the bullet does not strike bone, the round may pass through an arm for instance, causing little damage from a puncture type wound."

Regarding NATO's 62-grain FMC M-855 (SS109) .223 caliber round Dr. Fackler observed that the bullet produces a wound profile similar to the M-193's, particularly where abdominal or thigh wounds were involved. Other sources indicate this bullet, with a [steel] core penetrator, exhibits 10% greater fragmentation and retains its ability to fragment at slightly longer ranges than the 55-grain military bullet. *[Keep in mind that the M-855 round, because of its steel core, has a length comparable to a 73-grain lead core bullet, and should be shot out of longer barrels (18+ inches) with tighter twists in order to retain good practical accuracy]*

Hollow and soft point bullets in this caliber can be expected to upset and fragment much sooner and more consistently than full metal case (FMC) bullets. In light of this more consistent performance, Fackler recommends hollow points over "ball" ammunition for police use, providing the HP bullet penetrates deep enough to disrupt something vital. However, in his candid opinion the most effective round currently available for law enforcement operations is the 64-grain, Winchester-Western, pointed soft point, currently referred to as "Power Point". This bullet has a heavier jacket than those tested by the FBI, resists hyper-fragmentation, penetrates well and "expands like a .30 caliber rifle round." Subsequent FBI tests of this round fired from Colt's 14.5-inch barreled Mk-IV carbine bore this out and bullet expansion was "impressive."

Dr. Fackler also advised that the synergistic effects of fragmentation and high velocity temporary cavitation cannot be scientifically measured in gelatin because that medium is too elastic. More Accurate results can be obtained by examination of fresh animal tissue soon after it is shot.

Range Limitations

Federal's Blitz round, because of its very high velocity, low weight and frangible construction, demonstrated extremely poor overall penetration in the FBI tests. If it is considered for CQB use, it should be fired from ultra-short barreled weapons, such as Heckler & Koch's, 8.85-inch barreled HK-53. Shorter barrels would bleed off excessive velocity to reliably fragment and produce good temporary stretch cavities at close range. Because of this velocity loss, the maximum effective range on personnel would most likely be 100 yards or less. To ensure that

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.223 caliber bullets perform as previously described by Dr. Fackler, it appears that a minimum target striking velocity of 2,500 feet per second (fps) is required. Bullets over 50 grains in weight may not accelerate to this critical velocity in barrels less than 10 to 11 inches in length. Tactical teams should therefore carefully select the appropriate barrel length for their CQB weapon, to ensure that the round they employ will deliver minimum terminal ballistic velocities at the ranges desired and balance it against maneuverability requirements *[Also remember that dr. Fackler's data is based on the FMJ ball ammo results and that hollow point ammunition will be as effective with lower velocities]*

"Bull pup" configured carbines, such as the Steyr AUG, enjoy a distinct advantage here, because they retain long barrel lengths with relatively compact overall dimensions and are as flexible as an SMG in confined areas. In fact, a Steyr AUG compares favorably to H&K's MP5-SD SMG in overall length and with a 16-inch barrel, is only an inch longer overall than a 14-inch barreled Remington 870 raid shotgun.

[At this point, Mr. Taubert's article goes into extreme range shooting and barrel length. His suggestion is to have a barrel at least 14-18 inches long for CQB use as this allows for useful terminal ballistics at around 150-200 yards with 60+ grain bullets. I disagree with Mr. Taubert's point of view for the simple fact that we are discussing Close Quarters firearms, and not long range sniping firearms. In these instances, a barrel length of 6-10 inches is practical for entry team use as it allows for greater maneuverability and acceptable ballistic performance with 55-grain hollow point ammunition. Also, a lot of Mr. Taubert's information is based off of Dr. Fackler's research using FMJ ammunition. Most of my information is based upon real-world shootings and actual testing of commercial ammunition in short barreled firearms designed for this application.]

A recent review of major U.S. ammunition manufacturers' pricing indicates that commercially loaded .223 ammunition is slightly less expensive than similarly configured premium hollow point pistol ammunition. With millions of rounds of surplus military .223 ammunition possibly available to law enforcement, because of numerous base closures and through low cost channels, training with this caliber could be highly cost effective.

The .223 carbine is able to satisfy both close and intermediate range requirements and presents a good argument for eliminating the necessity for the law enforcement SMG. This one-gun concept will not only stretch departmental funds in this respect and reduce training requirements, but in some cases the difference in price between a single-fire carbine and a select-fire SMG often amounts to several hundreds of dollars. The need for full automatic fire with the M-16 carbine is debatable and two single-fire versions can often be purchased by police agencies for the cost of one top-of-the-line SMG. *[This is a fact that I have been preaching for a long time. Another fact that Mr. Taubert does not touch on is that the M-16/AR-15 family of rifles use a split receiver system that allows the rapid exchange of differently configured uppers. This allows one officer to carry a 16" CAR-15 in his patrol vehicle as his secondary firearm, and a 6" upper receiver unit in his trunk for tactical entry use]*

As a result of contemporary research, such as that conducted by the first FBI's Wound Ballistic Workshop, some law enforcement agencies have expressed the opinion that concerns about

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pistol bullet over penetration were exaggerated. They cite the toughness and flexibility of the human skin in resisting bullet exit and the fact that police officers historically missed their intended targets most of the time in actual shootings. While poor hit ratios and over penetration may not be critical to some for individual gun battles that occur in the street, these marksmanship realities can become real planning and safety concerns when establishing fields of fire during raids, hostage rescues and other tactical operations.

Typically, these operations involve confined areas, where officers occupy positions in close proximity to each other. In close combat operations, every round expended must be accounted for. It is imperative that that rounds fired hit their intended targets and not pass through them to endanger other officers and innocent bystanders. If misses occur, it is desirable that once the stray round strikes a solid object, it expends its energy and disintegrates into relatively harmless pieces. If deep, barrier penetration is necessary, special ammunition or projectiles *[or weapons]* possessing this attribute can be selected.

Shootout Results

It was late in the morning on a hot July day in 1993, when members of a major Western cities' police tactical unit executed a search and arrest warrants in connection with a narcotics raid on a "biker residence." The tactical officers were armed with Sig-Sauer 9mm P-226 pistols and 16-inch barreled Steyr AUG .223 caliber carbines with optical sights. The Steyr, loaded per SOP, with 28 Federal 55-grain HP rounds was the primary entry weapon for several officers on the team. Steyr carbines were selected for this raid, because the team leaders anticipated shots "out to 25 yards."

The team was required to knock and announce, effectively negating the element of surprise. Approximately 92 seconds into the raid, the officer involved in the following shooting incident was in the process of cuffing a subject when two Rottweiler dogs attacked. While the other officers were dealing with the dogs by employing OC aerosol, a 6-foot-tall, 201-pound subject, high on "speed", suddenly burst into the room occupied by the police through a locked door and leveled a 9mm pistol at one of the tactical officers. The distance between the adversaries was approximately 20 feet. With his back essentially to the subject, the involved officer acquired the threat in his peripheral vision, whirled around and commanded, "Police, put your hands up," while clearing the Steyr's safety and mounting the weapon. The subject then shifted his pistol, held by one hand in a bladed stance, towards the reacting officer. In "less than a second" the subject's hostile action was countered by the officer by firing two fast, sighted, tightly controlled pairs, for a total of four rounds at the subject. Rounds one and two missed, but were contained by the structure. Round three connected, penetrated and remained in the subject. Round four grazed his upper chest and exited as he spun and fell. Round three was quickly effective. The collapsing subject ceased all motor movement and expired within 60 seconds. The involved officer was aware of each round fired and simultaneously moved to cover. Tactical members were then confronted by a female accomplice armed with a double-barreled shotgun. However, the involved officer also successfully negotiated her surrender. All .223 rounds that missed the subject struck parts of the building's internal structure, fragmented and remained inside.

When the autopsy was performed, the forensic pathologist was amazed at the degree of

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internal devastation caused by the .223 round. There was a two-inch void of tissue in the chest, with a literal "snowstorm" of bullet fragments and secondary bone fragments throughout the upper left chest area. The round struck the subject 11 inches below the top of his head and inflicted the following wounds:

- Penetrated the top of the left lung, left carotid and subclavian arteries.
- The collar bone and first rib were broken. Cavity measured 5x6 centimeters.

What is significant about this "instant one-shot stop" was that the round did not strike the subject at the most effective or optimum angle and did not involve any direct contact with the heart or central nervous system. It is doubtful that this type of terminal ballistic performance could have been achieved by any of the police service pistol/SMG rounds currently in use.

Although this is only one incident and could be an aberration, police tactical teams require this type of terminal ballistic performance to enhance their safety and survival particularly during CQB engagements, when criminals most often enjoy a positional and action-versus-reaction time advantage.

The FBI study clearly demonstrates the following: (1) that .223 rounds on average, penetrate less than the hollow point pistol rounds evaluated, (2) concern for over penetration of the .223 round, at close range, has been greatly exaggerated, (3) with the exception of soft ballistic garment penetration, the .223 round appears to be relatively safer for employment in CQB events than the hollow point bullets tested.

Observations and experience indicate that high velocity rifle bullets generally produce more serious wounds in tissue than pistol bullets, regardless of range.

Violent temporary cavitation, in conjunction with bullet yaw and fragmentation, are essential wounding components for high velocity rifle projectiles.

As range and bullet stability increases and velocity decreases, rifle caliber wound severity decreases and penetration increases.

Where soft target penetration requirements exist and over penetration concerns are prevalent, police should employ hollow point bullets in this caliber.

Full metal case or heavier soft point bullets may be more appropriate for hard target penetration in this caliber.

The .223 and the current carbine systems available for it are highly versatile and well suited for urban as well as rural operations. However, because of enhanced terminal ballistic performance, rifles are recommended if targets are expected to be engaged beyond 200 meters. *[The .223 round itself should not be used in law enforcement applications at any ranges outside of 300 yards/meters. Long distance shots should be left to highly trained sniper units using medium caliber center fire rifle ammunition. e.g. .308/7.62 NATO. Also, the majority of*

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police sniper shots occur within 100 yards/meters.]

The ability to train with one shoulder weapon and caliber for both CQB and open air options simplifies logistics and training, makes training more effective and is cost effective. *[Again, one upper for general, secondary weapon usage, and one upper for CQB]*

Under current pricing, police agencies can realize significant savings by purchasing single-fire carbines instead of select-fire machine guns.

Because of the "political" considerations and perhaps the concern over the possibility of more serious injuries caused by errant "friendly fire," the highly versatile and powerful .223 carbine may not be a suitable CQB firearm for some departments. However, if the above factors are not involved, the .223 carbine is an extremely flexible and effective anti-personnel weapon with, in many cases, handling characteristics actually superior to many contemporary SMGs. It offers the advantages of reduced logistics, lower costs and reduced training time when compared to agencies employing multiple specialty weapons. The caliber in its current offering is far from perfect, but in spite of some shortcomings, I anticipate that in the future it will eventually replace pistol caliber SMGs in many police departments and law enforcement agencies.

It has been a recently growing trend to see law enforcement departments exchanging their issue shotguns for the police carbine in 9mm, .40 S&W, and .45 ACP. And many departments have found that these carbines do not serve their needs as they expected. However, they are fearful to switch, or in many cases purchase, .223 carbines because "they will go through 10 people and 3 city blocks before they stop!" As you can see, this is not the case, and is in fact, completely the opposite. I hope that this article helps to clear all false truths and misnomers about this very versatile and serviceable cartridge.

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EXHIBIT "10"

Real World .223 Testing

.223 / 5.56 Penetration Tests vs.

.40 S&W and 12 ga. Slug

Overview

The research on the penetration of .223 ammunition has been completed. In an effort to make research more meaningful, testing consisted of handgun and shotgun ammunition in the same testing medium. The final results were that the .223 demonstrated less penetration capability than the 12 gauge slug and the .40S&W [handgun round].

Testing Medium

Type 250A Ordnance Gelatin was cast into blocks, 6"x6"x16". The process used is that which is recommended by Col. M. Fackler, Director of the US Army Wound Ballistics Laboratory. This is a 10% mixture, 1Kg of gelatin to 9000ml of H₂O. This type of gelatin accurately simulates human body tissue in terms of bullet penetration.

A small piece of wall was constructed to duplicate the standard exterior walls found in [the Pacific Northwest] area. This piece of wall was sheeted with ½" wafer board, covered with a 2nd piece of ½" wafer board to simulate siding. This wall was built using a 2x4 frame and finished on the inside with ½" sheet rock. The interior [of the wall] was lined with fiberglass insulation.

Weapons Used

CAR-15, cal .223 Rem./5.56x45mm with a 16" barrel.
Glock M22, cal .40S&W.
Remington 870, 12 ga.

Ammunition Used

Federal .223 Remington, 55 grain HP.
Winchester .40S&W, 180 grain HP.
Federal 12 ga., 2 ¾", rifled slug.

Real World .223 Testing

Procedure

All rounds were fired from a distance of 12 feet. After each round was fired, its penetration was recorded and bullet performance noted. After a bullet was fired into the [bare] gelatin, another bullet of the same type was fired through the section of wall and into the gelatin. This was done in order to determine its penetration potential in the event a stray round were to hit the wall of a building.

Results

<u>Caliber</u>	<u>Testing medium</u>	<u>Penetration</u>	<u>Condition of bullet</u>
.223 Rem.	gelatin only	9.5"	two pieces
.223 Rem.	wall & gelatin	5.5" *	fragmented
.40S&W	gelatin only	13.5"	mushroomed
.40S&W	wall & gelatin	22" *	no deformation
.40S&W	wall & gelatin	22" *	no deformation
.40S&W	wall & gelatin	19.5" *	slight deformation
12 ga.	wall & gelatin	27.5"	mushroomed

* these measurements do not include penetration of the 6" wall.
CCI Gold Dot.

Summary

The 55 grain HP .223 has less penetration than any of the other ammunition tested. Based on the results of this testing, there appears to be no basis for concern regarding the over penetration of the .223 [HP] round. In fact, it seems even safer in this regard than .40 S&W handgun ammunition.

The hollow point cavity in the .40S&W round filled with material when shot through the wall. This caused [these bullets] to fail to expand when they entered the gelatin. As a result, they penetrated 8.5" farther than when shot directly into the gelatin.

When the .223 [HP] was shot through he wall it began to fragment and as a result penetrated the gelatin only 5.5";.

Because the .223 [HP] begins to break up on impact, it has less potential for damage or injury than the 12 ga. in the event of a ricochet. The .223 [HP] is obviously safer in an urban environment than the 12 ga. with slugs or buckshot.

Real World .223 Testing

Additional testing conducted proved that the .223 would penetrate a car door or glass. The .223 rounds fired into windshields began to break up after entering the glass and did not retain much energy. In most cases these rounds split in two.

The Call-Out Bag

by Gunsite Training Center Staff

A Comparison of .223 Penetration vs. Handgun Calibers

The .223 shoulder-fired weapon systems (e.g., AUG, CAR) have received some recent interest as indoor tactical weapons for special operations teams. Increased power, longer effective distances, and greater tactical flexibility have been cited as positive factors of the .223 systems over 9mm SMG-type weapon systems. Other authors (Fackler, et al) have postulated greater capability for tissue damage and incapacitation of the .223 rifle cartridge over the 9mm projectile fired from handguns or SMGs. Negative considerations for the indoor use of the .223 weapon systems focus on over-penetration of projectiles and possible subsequent liability.

Our effort was made to compare the penetration characteristics of various .223 bullets to various handgun bullets fired into test barriers representing indoor and outdoor building walls. We felt that the following test might mimic shots fired from inside a building, through the internal rooms, out the exterior wall, and into another similar building nearby. A comparison of wall penetration effects by a variety of handgun calibers versus the effects of .223 FMJ ball, .223 SP, and .223 HP, under these same conditions, was expected to substantiate other findings reported or provide new information to those interested in this area of ballistics.

Two interior test walls were constructed using a wood 2x4 frame with standard drywall board attached to both sides. Two exterior test walls were made using wooden frames with drywall board attached to one side and exterior grade T1-11 wooden siding attached on the other (exterior) side. R-19 fiberglass insulation batting (Dow Corning) was stapled inside the two exterior test walls. To maintain test medium consistency, no wooden cross beams, electrical

Real World .223 Testing

fixtures, conduits, or electrical wiring were placed in any of the test walls.

The test walls were placed in the following sequence to mimic shots fired from inside a building, through two internal rooms, out the building, and into another similarly constructed building:

- A.** Interior wall #1 was placed 8 feet from the shooting position.
- B.** Interior wall #2 was placed 8 feet beyond interior wall #1.
- C.** Exterior wall #1 was placed 8 feet beyond interior wall #2. (Exterior side facing away from the shooter.)
- D.** Exterior wall #2 was placed 15 feet beyond exterior wall #1. (Exterior side facing toward the shooter.)

All calibers tested were fired from a position 8 feet in front of interior wall #1, so the bullet trajectory would travel in sequence through each of the succeeding test walls. Each caliber tested was chronographed and all firing results were videotaped for archive files.

The following results were obtained:

- 1. All handgun calibers exited exterior wall #1. This means they exited the "house" after passing through two interior "rooms," then entered another "house" to impact into the berm. The handgun caliber which demonstrated the least penetration was .22 LR Lightning.
- 2. The only calibers which did NOT exit the "house" were .223 (5.56) soft point and hollow point loaded bullets.
- 3. All projectiles demonstrated directional changes in their trajectory after passing through the first interior wall. The greatest directional changes (10 inches+ yaw) were shown by 9mm and .40 S&W projectiles.
- 4. Directional changes in bullet trajectory appeared to increase in magnitude with each test

Real World .223 Testing

wall the projectile passed through.

The penetration characteristics of projectiles have long been believed to be primarily determined by a relationship of bullet mass, bullet shape, bullet velocity, and bullet construction. The penetration differences of .223 soft point and hollow point projectiles versus the effects from .223 full metal jacket may be due to differences in bullet construction. The differential effects on penetration due to bullet construction shown with the .223 are different and appear greater in magnitude than those encountered when handgun bullet construction is modified. Since .223 projectile velocities are threefold greater than those of handgun projectiles, the increased magnitude of bullet velocity might account for the differences in bullet trajectory and penetration distance. The deviated trajectory of hollow point handgun projectiles was also greater than the deviation found with full metal jacketed handgun bullets; again, possibly due to contact point deformation. The preceding study more than ever identifies the need for a personal emphasis of marksmanship and tactical fundamentals. The shooter is responsible for the bullets that go downrange. Practice, be aware, manage your trigger, and watch your front sight!

Many thanks to Jack Furr, Ron Benson, Pete Wright, and Seth Nadel, U.S. Customs, for conducting and reporting this test.

.22 LR 40 gr Lightning	899 fps	Captured in exterior wall #2
9mm 147gr Win JHP	948 fps	Captured in exterior wall #2
9mm 147 gr Win JHP	1004 fps	Exited exterior wall #2
.40 S&W 180 gr FMJ	941 fps	Exited exterior wall #2
.40 S&W 180 gr Black Talon JHP	881 fps	Exited exterior wall #2
.45 ACP 230 gr Win FMJ	867 fps	Captured in exterior wall #2
.45 ACP 230 gr HydraShok JHP	854 fps	Exited exterior wall #2
.223 (5.56) 55 gr Fed FMJ	2950 fps	Exited exterior wall #2
.223 (5.56) 55 gr Rem S&W	3019 fps	Captured in exterior wall #2
.223 (5.56) 55 gr Fed JHP	3012 fps	Captured in exterior wall #2

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EXHIBIT "11"

11/18/2019

Why "High Powered" 5.56 NATO/.223 AR-15 Ammo is Safer For Home Defense (FBI overpenetration testing) - Prepared Gun Owners

5929

Why "High Powered" 5.56 NATO/.223 AR-15 Ammo is Safer For Home Defense (FBI overpenetration testing)

By Caleb - Jul 14, 2016

6
Shares

If you listen to the mainstream media, then the standard 5.56 NATO/.223 Remington cartridges the AR-15 shoots are "high powered assault weapon" rounds that have no place in civilian hands.

(I hope you are catching the sarcasm as I'm pouring it on)

Yet, as we've discussed previously, the AR-15 is a GREAT choice for Home Defense.

And what's even more amazing, is that it may be one of the "safest" bullets you can shoot from a gun in a home when it comes to overpenetration concerns.

Home Defense and The Risks of Over-Penetration

The truth is that almost everyone, once they start thinking about home defense, starts to think about overpenetration.

In other words: what if I miss the bad guy? Where will the bullet go? Is it going to go through a wall and hit other members of my family?

That's what they call "over penetration".

The truth is: almost any round that will penetrate deeply enough to hit vital organs in the human body (and stop an attacker) will penetrate typical interior home walls.

That's because most walls are made up of little more than a couple 2x4 wood studs and drywall on each side. And maybe some insulation depending on the part of the country.

Although this fact remains, that ANY adequate self-defense round will penetrate a wall because you need it to penetrate human flesh, we still want to limit our penetration as much as possible.

Shotgun VS Pistol VS Rifle Home Defense Penetration

Your typical choices for home defense weapons are a pistol, the shotgun, or a rifle.

Now, when most people think of overpenetration risks they assume that pistol bullets would penetrate less than the rifle or shotgun.

That's actually dead wrong.

11/18/2019

Why "High Powered" 5.56 NATO/.223 AR-15 Ammo 5930 For Home Defense (FBI overpenetration testing) - Prepared Gun Owners

Pistol bullets consistently penetrate the most.

Shotgun is next.

And rifles, at least the so-called "high powered assault weapon" AR-15 in 5.56 NATO/.223 Rem penetrates the LEAST.

FBI and Independent Testing Has Consistently Shown .223/5.56 NATO Fired From AR-15's Do Not Over Penetrate More Than Pistol/Shotgun

First up is this older article by R.K. Taubert, a retired FBI agent with over 20 years experience who conducted extensive counter-terrorism and weapons research while with the Bureau.

To quote Mr Taubert, (emphasis mine) "... As a result of renewed law enforcement interest in the .223 round and in the newer weapons systems developed around it, the FBI recently subjected several various .223 caliber projectiles to 13 different ballistic tests and compared their performance to that of SMG-fired hollow point pistol bullets in 9mm, 10mm, and 40 S&W calibers.

"Bottom Line: In every test, with the exception of soft body armor, which none of the SMG fired rounds defeated, the .223 penetrated less on average than any of the pistol bullets."

And again on this page, there is testing by Gunsake Training Center Staff which found in a comparison of handgun calibers (9mm, .40 S&W, .22 LR, .45 ACP), and rifle caliber .223 (5.56) that:

"The only calibers which did NOT exit the "house" were .223 (5.56) soft point and hollow point loaded bullets."

Then there are the "Box O' Truth" tests with great pictures where they found, "... Common pistol rounds easily penetrated all 4 walls spaced out at room distances ... The 12 gauge shotgun went through 4 walls like they were not there ... The 5.56 rounds deviated greatly from the original flight path once they started tumbling. This occurred after the second wall."

And this drywall testing concluded, "Moving away from rifle rounds takes us from fascinating discoveries into the realm of mythbusting. Handgun rounds, for instance, may penetrate less than rifle rounds-but only if the rifle rounds in question are full-power ball ammo. **The relatively slow speed and heavy weight of handgun bullets make them a poor choice for limiting interior wall penetration, which is why professional door-kicker types have abandoned pistol-caliber submachineguns in favor of .223 carbines.**"

And this interesting test at outdoorhub found "The pistol rounds were seemingly unaffected by the drywall and/or wood barriers. There was no observable deviation or fragmentation of the 9mm projectiles. You'd be safe counting on a pistol round to keep going, and going, and going ... Even though the .223 rounds start with a lot more energy, they tend to lose it quickly when encountering the barriers in this test ... **Moral of the story? Don't trust the mainstream media. Those high-powered, so called "assault weapons" may be safer than your average pistol for inside-the-home defense.**"

(NOTE: many of the rounds tested at outdoorhub are found on the "approved list" of AR-15 self-defense ammo here.)

When It Comes To Home Defense, The AR-15 Rifle Ammo Is Less Likely To Over-Penetrate

The truth is that AR-15 ammo is less likely to overpenetrate. Yet it is highly effective at stopping threats. Sounds like a good choice for Home Defense to me.

Please Note that all this "rifle vs shotgun vs pistol" testing is comparing the AR-15 in standard 5.56/.223 to the pistols and shotguns —

That means that "other rifles" such as AK-47's in 7.62x39, .308 hunting rifles or AR-10 style semi-autos, etc are not included in these tests. THOSE rifle bullets would most likely penetrate much, much further because they are bigger, heavier bullets (though I'm not aware of much actual testing).

11/18/2019

Why "High Powered" 5.56 NATO/.223 AR-15 Ammo **5931** For Home Defense (FBI overpenetration testing) - Prepared Gun Owners

The bottom line to remember in all of this though is to still be aware of your target and what is around/beyond it because ALL bullets that will penetrate deep enough to stop an attacker will still penetrate at least one interior wall. And even a bullet, like the .223 that tends to lose steam and deviate after a wall or two can still be deadly to your family/innocents.

Check out these other articles for more on excellent performing 5.56 NATO/.223 ammo:

- [The "Approved List" Of 5.56 NATO/.223 Rem Self-Defense/Duty Ammo](#)

- [The Best Hunter Defense Ammo For Your AR-15?](#)

Anyways, I hope this clears up some misconceptions when it comes to choosing home defense ammo (or a gun) that will be least likely to penetrate.

Caleb

Caleb Lee is the #1 best-selling author of "Concealed Carry 101" and founder of PreparedGunOwners.com. He is a civilian (no law enforcement or military experience) who shares information about self-defense and becoming more self-reliant. He's a 1st degree black belt in Taekwondo, NRA Certified Basic Pistol & Personal Protection Inside The Home Instructor, Concealed Carry Academy Instructor certified & also a graduate of the Hangemaster Inverness instructor course. He's also the author of numerous online courses including the UndergroundAssaultRifle.com course.

EXHIBIT "12"

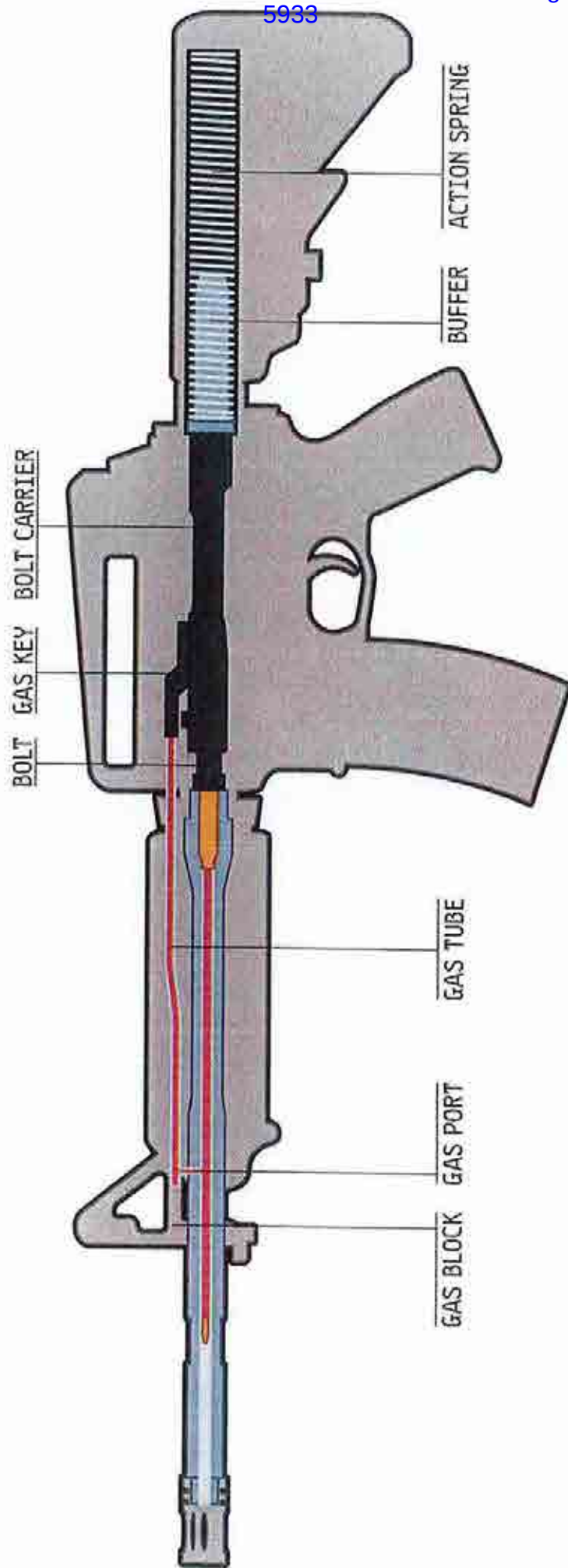


EXHIBIT "13"



MidwayUSA.com
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AR-STONER Flash Hider A2 1/2"-28 Thread AR-15

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Product #: 691158 Manufacturer #: A2-FLASH-556



Our Price: **\$7.99**

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Product Overview

The AR-STONER™ A2 Flash Hider with 1/2" - 28 threads is an effective option for reducing muzzle flash from AR-15 rifle barrels. This high quality, matte steel, flash hider is ready for installation on your AR-15 rifle.

Note: The use of a steel rod is recommended.



EXHIBIT "14"

SECURITY

Violent Crimes Most Likely to Occur At Night



June 14, 2019

When are criminals active during the day? The [Crimes at Night: Analyzing Police Incident Reports in Major Cities](#) reveals that violent crimes occur most often at night.

In 2017, an estimated 1,247,321 violent crimes occurred nationwide, a decrease of 0.2 percent from the 2016 estimate, according to [FBI](#) data.

This website requires certain cookies to work and uses other cookies to help you have the best experience. By visiting this website, certain cookies have already been set, which you may delete and block. By closing this message or continuing to use our site, you agree to the use of cookies. Visit our updated privacy and cookie policy to learn more. **More than half of police incidents took place during the day:** **Recently, theft, drug violations, simple assaults, and property crimes were slightly more likely to happen while the police were on duty.**



Percentage of Police Incident Reports, by Offense Type

Offense	At Night Percentage	During the Day Percentage
DWI/DUI	87%	13%
Murder & Negligent Manslaughter	65%	35%
Rape/Sexual Assault	59%	41%
Robbery	56%	44%
Aggravated Assault	54%	46%
Motor Vehicle Theft	51%	49%
Burglary	50%	50%
Property Crime	48%	52%
Simple Assault	47%	53%
Drug Violation	43%	57%
Larceny/Theft	40%	60%

Police incidents tend to happen between Monday and Friday.

- Friday experienced the highest peak in known crime reports during the day, with an average of 755 police incidents per 10,000 residents. Alternatively, Sunday had the fewest incidents during the day – an average of 595 per every 10,000 individuals.
- When are violent crimes most likely to happen? Unfortunately, midnight was the peak hour for violent crimes like rape and sexual assault, while 2 a.m. was the ideal time to stay off the roads – DWI/DUI police incidents happened the most then.
- Murder peaked at 9 p.m. and aggravated assault peaked just an hour after.

KEYWORDS: [crime rates](#) [robbery](#) [violent crimes](#)

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Related Articles



EXHIBIT “15A”

AR15 shot without flash hider.





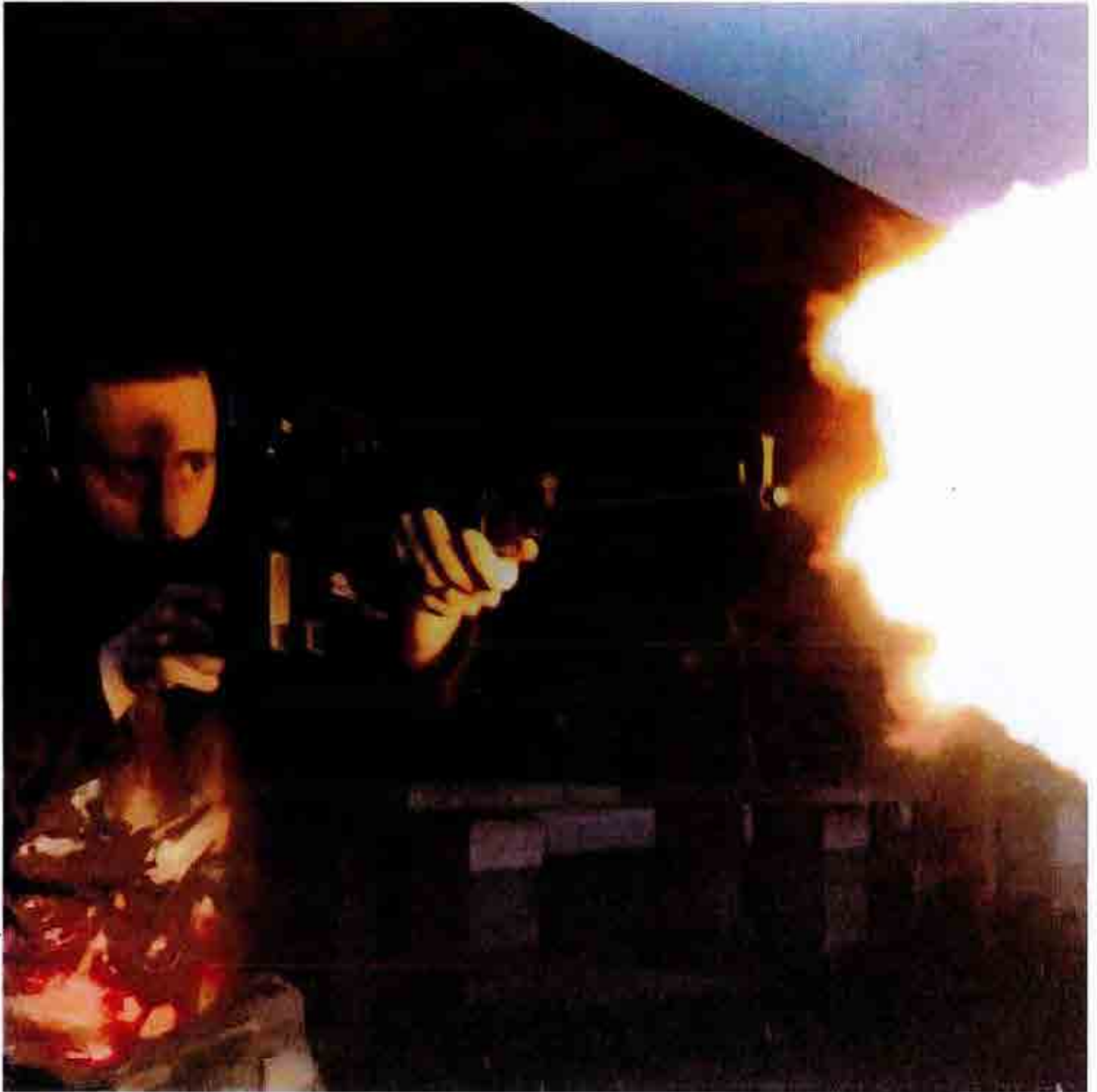


EXHIBIT “15B”





The Peregrine Corporation

Specialists in Defense Dynamics



July 17, 2023

Daniel J. Schmutter, Esq.
Hartman & Winnicki, P.C.
74 Passaic Street
Ridgewood, NJ 07450

Re.: Reply Report - Ellman, et al. v. Platkin, et al., and Association
of New Jersey Rifle & Pistol Clubs, Inc. et al. v. Platkin, et al.

Dear Attorney Schmutter:

I am writing to reply to the reports of the defendants' expert witnesses in the two above-referenced cases, and to supplement my initial report dated June 15, 2023 in these cases.

Preparation. In preparation, I have read the reports of defendants' expert witnesses Randolph Roth, Daniel W. Webster, Dennis Baron, James E. Yurgealitis, Louis Klarevas, Robert J. Spitzer, Saul Cornell, Lucy P. Allen, and Stephen Hargarten. In addition, I have reviewed various research materials in my own library, on the internet, and elsewhere, spoken with several individuals with information on Revolutionary War era arms and accoutrements, visited the Washington Crossing Historic Park and inspected several items in the museum's collection there. The most significant of the sources I researched are cited below.

Additional Details on My Qualifications for Rendering Opinions. In addition to my qualifications, training, experience, and education outlined in my June 15, 2023 report and in my curriculum vitae provided at that time, I would now include the following details, which are of particular relevance in replying to the reports of defendants' expert witnesses:

For many years I have owned and fired black powder, muzzle-loading, flintlock firearms of the same general type in use during the American Revolution, and during the period immediately following the Revolution when the Second Amendment was written and adopted. I also have friends and acquaintances who are "re-enactors" of Revolutionary War and Civil War battles.

I have done many types of ballistic testing for the past 45 years, including accuracy testing, trajectory calculations, velocity measurements using electronic chronographs, firing of projectiles into ballistic gelatin, water, and other media, ricochet studies, and penetration testing by firing projectiles at car windshields and other automotive glass, tempered and laminated safety glass, autobody sheet metal, entire automobiles, steel armor plates of various

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EXHIBIT

2

specifications, wood, sheetrock, plexiglass, polycarbonate, glass-reinforced plastic, soft body armor, and other materials.

I have been a hunter since my teenage years. I have hunted in New Hampshire, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Indiana, Louisiana, and Alabama. I have hunted deer in five of those states. Among other animals, I have hunted game birds and waterfowl, small game, coyotes and other varmints, deer, bear and wild boar, and have taken animals ranging in size from a few ounces to 1,800 pounds. I have attended hunter safety or hunter education classes in three states. I have worked as an expert witness in hunting accident cases in several states and Canada. I am generally familiar with hunting laws and methods, and the types of firearms and ammunition used for hunting, in many parts of the United States.

I hold a bachelor's degree in English Literature with honors from Yale University. I have authored, edited or helped to edit over 130 published works in the firearms field, including a 348-page work, *Standards & Practices Reference Guide for Law Enforcement Firearms Instructors*, IALEFI 1995, of which I was the Associate Editor and Preston Covey, a professor at Carnegie Mellon University, was Editor. This work is a combination of a glossary of firearms terms, and short articles on key topics. I have been Technical Editor of *Police Marksman* magazine, and have served on the editorial boards of *The Firearms Instructor* and *Special Weapons and Tactics* magazines. Although I do not have the academic credentials in linguistics of defendants' expert Dennis Baron, I believe that my extensive background, training and study in firearms and firearms terminology more than makes up for that when the issue is whether a modern firearm's "magazine" is the "present day analog" of the Revolutionary War soldier's "cartridge box," which is the argument made by Dennis Baron in his expert report.

Discussion and Analysis

Rate of Fire. Throughout the report of defendants' experts, the experts state "rates of fire" of various firearms. For example, on page 16 of his report, Robert Spitzer states that "[a] Tommy gun could fire "an astonishing 1,500 rounds per minute. A Tommy gun could go through a 100-round drum magazine in four seconds. Later versions fired 600 to 700 rounds per minute." Yes, it would indeed be "astonishing" if a Thompson submachine gun could actually fire 1,500 rounds per minute or, for that matter, even 600 to 700 rounds per minute in actual field use, except in an extremely contrived situation. The truth, however, is to the contrary.

The Court should understand that the above numbers are not actual rates of fire of the stated firearms. Instead, the stated rates are the theoretical cyclic rates of fire of the firearms – that is, how fast the mechanism of the firearm cycles from shot to shot, and would therefore, theoretically, fire within one minute given an uninterrupted source of ammunition. For instance, given that our military's M16A1 and A2 rifles had a cyclic rate of fire of approximately 750 rounds per minute, if the trigger were held rearward in the fully automatic mode, the rifle would empty a 30-round magazine in about 2.4 seconds, which is about 12.5 rounds (shots) per second. That is, of course, without any consideration of accuracy or hitting any target. It is simply, as shooters might say, "turning ammunition into noise." If it would then take the infantryman 5 seconds to eject the empty magazine, withdraw a fresh magazine from his magazine pouch, insert the fresh magazine into the rifle, close the rifle's bolt to ready it for firing, and reposition

his hands on the rifle for firing, the actual rate of firing would be 30 rounds in 7.4 seconds. Assuming the infantryman has enough loaded 30-round magazines within easy reach to continue repeating this process at this speed for 60 seconds – which is unlikely – the actual number of rounds fired in that minute would be 243, not the “750 rounds per minute” indicated by the theoretical cyclic rate of fire. And again, even the actual 243 rounds per minute maximum rate of fully automatic fire does not take into account the time it actually takes a shooter to identify a target, aim at it, and press the trigger in a manner that achieves a hit on the target. Moreover, the standard “load-out” for an infantryman with our current 5.56mm M4 rifle (the current version of the M16) is seven 30-round magazines, or 210 rounds. So even the example of firing 243 rounds in 60 seconds is theoretical, not actually achievable by a U.S. infantryman. In addition, some of our issued 5.56mm rifles cannot fire fully-automatically, but have a 3-round burst limitation. In other words, if the trigger is pulled and held to the rear, only three shots will be fired from those rifles until the trigger is released and pulled again, not a continuous stream of shots. This is indicative of the fact that fully-automatic fire against point targets (specific targets) is generally inaccurate, ineffective, and wasteful of ammunition.

The bottom line of this discussion is that cyclic rates of fire given by defendants’ experts are of only technical, theoretical interest. In actual use, the firearms cannot be fired that quickly, and if they were fired fully-automatically at all, the result would typically be very inaccurate fire and a quick cessation of the engagement when the shooter exhausts his ammunition supply.

Finally, the Court should understand that the firearms at issue in these lawsuits are not fully automatic firearms at all – they are semi-automatic firearms that fire one shot each time the trigger is pulled once. In order to fire another shot, the user must release the trigger, and pull it again, and so on for each shot fired. Fully automatic weapons – “machine guns” – have been highly regulated by the federal government since the adoption of the National Firearms Act in 1934. New Jersey statutes prohibit the possession of machine guns by private individuals “unless the public safety and welfare so requires.” In other words, private possession of machine guns, while permitted in many other states, is basically prohibited in New Jersey. Therefore, the defense experts’ citation of the cyclic rates of fully automatic fire for guns discussed in their reports is irrelevant to the issues before the Court, and appears to be simply an attempt at sensationalism.

Revolutionary War Cartridge Boxes Compared to Modern Magazines. Defendants provide the report of Dennis Baron, a linguistics professor. In his report, Mr. Baron goes to great lengths to show that, at the time of the Revolutionary War, a soldier’s musket, bayonet, and sword (if he carried one) were called “arms,” while the soldier’s cartridge box was considered a military “accoutrement,” not an “arm.” Defendants’ expert Saul Cornell makes a similar “accoutrements” argument.

The soldier’s cartridge box was a leather pouch, typically measuring about 10” long by 4-1/4” high by 3-1/2” deep, with a wooden insert with holes drilled in it, holding between 18 and 24 tubular paper cartridges, carried on the soldier’s belt or by a strap over his shoulder. Mr. Baron’s argument is that when the Founding Fathers, in the Second Amendment, provided that “the right of the people to keep and bear Arms, shall not be infringed,” they meant to safeguard

the people's right to their muskets and rifles, but not to their cartridge boxes! Putting aside for the moment the absurdity of the argument that the Second Amendment might have given people the right to keep and bear their muskets and rifles for defense of themselves and the nation, but did not give them the right to have the ammunition that would make the muskets and rifles usable, Mr. Baron goes on to make the critical, but fallacious, argument that "the cartridge box [is] the historical analog to magazines." See D. Baron Report at p. 19. Contrary to the professor's argument, however, the modern magazine is not the "analog" of the Revolutionary War soldier's cartridge box.

A firearm's magazine is:

the part of a firearm containing the reserve ammunition supply, and **out of which cartridges are mechanically fed to the chamber for firing.** (emphasis supplied)

The Illustrated Book of Guns, David Miller, Editor, "Glossary" p. 298 (2004). And see the *Oxford English Dictionary*, which defines "magazine" in sense IV(b) as:

A container or (detachable) receptacle in a repeating rifle, machine-gun, etc., containing a supply of cartridges **which are fed automatically to the breech.** (emphasis supplied)

This definition is cited by Mr. Baron himself, see D. Baron Report at p. 28.

The New Jersey statute itself defines a "large capacity ammunition magazine" as:

... a box, drum, tube or other container which is capable of holding more than 10 rounds of ammunition **to be fed continuously and directly therefrom into a semi-automatic firearm.** (emphasis supplied)

NJS 2C:39-1(y).

The Revolutionary War soldier's cartridge box did not feed cartridges into the chamber of his musket or rifle. Instead, it simply carried the paper cartridges, simplifying the soldier's task of putting powder into the flash pan, and more powder, followed by the musket ball and perhaps several buckshot (see below), into the muzzle – not the chamber -- of the musket or rifle. The cartridge box was, as its name states, simply a box for carrying cartridges.

Firearms magazines take a variety of forms. Some are fixed, integral parts of the firearm, while others are detachable. Examples of fixed magazines include tubular magazines such as those commonly found on pump-action shotguns (e.g., Remington 870 and Mossberg 500/590), some .22 rimfire rifles (e.g., Winchester Model 61 and Henry Classic Lever Action .22), and the iconic lever-action Winchester Model 94 and the Marlin Model 336. There are also fixed box magazines, such as those on the 1903 Springfield rifle used in World War I, the Remington Model 700 ADL bolt-actions, the Soviet SKS rifle, and the U.S. M1 Garand rifle used in World War II. Some fixed box magazines, such as that of the Remington Model 700, are

loaded by hand. Others, such as those of the Springfield and SKS, can be loaded by hand or by use of a “stripper clip.” The fixed box magazine of the M1 Garand is loaded with an 8-round “en-bloc clip.” All of these fixed magazines, whether tubular or box-shaped, have a spring and follower mechanism that pushes the cartridges into position to be chambered when the pump-action, lever-action, bolt-action, or semi-automatic mechanism of the firearm moves the bolt or breechblock forward into battery for firing.

Detachable box magazines are usually rectangular in shape and, like fixed magazines, contain a spring-and-follower mechanism that pushes the cartridges into feeding position against the feed lips at the top of the magazine. Magazines of this type are generally inserted into what is called the “magazine well” of the firearm, where they are held in place by the magazine catch (or “magazine release,” in some manufacturers’ terminology). Examples of magazines of this type are the detachable box magazines of the Colt 1911 pistol and its many variants, the Browning P35 Hi-Power, almost all other modern semiautomatic pistols, the Ruger 10/22 rifle (which uses a rotary-design detachable box magazine), the Ruger Mini-14, the Springfield M1A, the AR-15 rifle, the AK-47 rifle, and almost all other modern semiautomatic rifles. Detachable magazine-fed firearms, whether pistols or rifles, are invariably sold by their manufacturers along with at least one, and sometimes two or three, magazines accompanying the firearm. The magazine, while detachable, is considered a part of the firearm. Without the magazine, the firearm could not be operated in its intended manner, and would be relegated to being loaded one cartridge at a time by hand by the user, and firing, at most, a single shot at a time. In fact, some such firearms are extremely difficult or, for some shooters, impossible, to load one cartridge at a time by hand in this way, and many such firearms are damaged if repeatedly loaded and fired this way, rather than in the intended manner using a magazine. Some firearms with detachable box magazines, typically semiautomatic pistols, have what is called a “magazine disconnect” or “magazine safety,” and cannot be fired at all with the magazine removed from the firearm. Designed by John Browning shortly after 1900, magazine disconnects have been used in pistols made by Colt, Smith & Wesson, Browning, and other manufacturers, the intended purpose being to prevent the accidents that sometimes occur when ignorant gun users remove the magazine from a pistol, believing they have “unloaded” the pistol, when in fact a round still remains in the pistol’s chamber. Pistols of this design make it clear, as do other firearms designs, that the magazine is a critical part of the firearm itself, not the “modern analog of the cartridge box” – a simple pouch for carrying cartridges, to be loaded into the flintlock by hand by the Revolutionary War soldier.

In contrast to a firearm’s magazine, which not only contains the firearm’s supply of cartridges waiting to be fired, but mechanically feeds the cartridges into the gun’s chamber for firing as the action (the moving parts) of the gun operates, a Revolutionary War soldier’s “cartridge box” was just that – a box holding cartridges. The cartridge box was not a “part of a firearm.” It was just a box, carried on the soldier’s belt or by means of a shoulder sling, in which the soldier carried cartridges. The soldier’s musket or rifle could be operated without a cartridge box; the soldier could – and some did – carry his cartridges in his pocket, or in some other sort of pouch, or could carry his powder in a powder horn, and his lead musket balls or rifle balls separately. The cartridge box was a more convenient way to carry ready-prepared paper cartridges, and allowed soldiers in formation to have a uniform appearance, but it was not a necessary part of the soldier’s musket or rifle.

Unlike the detachable box magazine of the AR-15 or AK-47, that is inserted into the rifle's magazine well and, by means of its spring-loaded magazine follower, elevates each self-contained metallic cartridge into feeding position in the magazine's feed lips so that the reciprocating movement of the rifle's bolt can chamber a fresh cartridge after each shot is fired, the Revolutionary War cartridge box had no such mechanism. In fact, it contained no mechanism at all. At the time of the Revolution, and for many years thereafter, metallic cartridges as we know them today did not exist. Designed to make loading the musket more efficient, cartridges were made of paper, about the weight of newspaper (and in fact newspaper was sometimes used for the purpose), rolled around a wooden dowel into the form of a cylinder or tube. The musket ball (or "buck and ball," see below) was positioned in one end of the tube, which was closed by twisting or folding the paper, or by tying it with a thin string. The tube was tied or twisted off just below the projectile(s) as well, the bottom section of the paper tube was filled with the black powder propellant, and the bottom end of the tube was closed in some manner (twisting, tying, or folding) to hold the powder in the tube. Cartridges of this sort were purchased from ammunition suppliers by the British and American governments for use by their troops, or sometimes the troops would make their own cartridges using paper, string, musket balls, and black powder.

To load his musket, the Revolutionary War soldier would first have to half-cock his musket to allow access to the priming pan. He would then open the leather flap of the cartridge box, then (in many cartridge box models) raise a secondary leather flap designed to protect the cartridges from the rain or snow, and then, using his fingers, pull a paper-wrapped cartridge from one of the holes drilled in the wooden cartridge box insert. The soldier would then tear open the end of the cartridge containing the powder – in battle, usually by biting it off with his teeth – and would pour a small amount of the powder into the musket's priming pan (flash pan), closing a metal piece called the musket's frizzen to keep the priming powder in place. The soldier would then pour the rest of the powder down the musket's muzzle, insert the musket ball (or "buck and ball," see below) into the muzzle -- generally along with the cartridge paper -- and would use the steel ramrod, withdrawn from its holder below the barrel of his musket, to ram the projectile(s), powder and paper down the barrel. The soldier would then replace the ramrod in its position below the musket's barrel.

To fire the musket, the soldier would cock (i.e., pull rearward) the musket's lock holding the flint (these were "flintlock" weapons at the time of the Revolution), aim, and pull the trigger. Pulling the trigger released the spring-loaded lock to rotate forward, bringing the musket's flint into contact with the frizzen. This pushed the frizzen open and resulted in a shower of sparks into the flashpan, sending sparks and flame through the touchhole into the chamber of the barrel to ignite the main powder charge and propel the projectile(s) down the barrel and out the muzzle toward the target. See generally, *Soldier of the American Revolution*, D. Hambucken and B. Payson, p. 26-35 (2011); and *Small Arms and Ammunition in the United States Service*, B. R. Lewis, published by the Smithsonian Institute (1956). A well-trained soldier is said to have been able to fire three or more shots per minute, although two shots per minute appears more likely on average. See, e.g., "Warfare History: Revolutionary War Weapons: The Brown Bess Musket," Warfare History Network, J. G. Bilby, 7/15/23. See generally Exhibit 1 for pictures of Revolutionary War cartridges and cartridge boxes.

Again, the cartridge box was simply a carrying pouch for the soldier's pre-wrapped paper cartridges. It was not a part of the musket or rifle, as a modern magazine is. The cartridge box was not inserted into the firearm like a magazine. It was not inserted into the firearm at all. The modern magazine, usually by its magazine spring and follower, mechanically positions cartridges into position to be chambered when the moving action of the firearm closes. The cartridge box did nothing of the sort. Instead, the soldier removed cartridges from the cartridge box one by one, as he used the cartridges, one by one, to load his musket or rifle by hand.

About the time of the Civil War, paper-wrapped cartridges and muzzle-loaders began to be replaced by breech-loading firearms using self-contained, metallic cartridges. The "modern analog" of the Revolutionary War soldier's cartridge box is not the magazine which, whether fixed or detachable, is a mechanical part of the firearm. The "modern analog" of the Revolutionary War cartridge box is a cartridge pouch, such as those shown in Exhibit 2.

Wounding Capabilities of Revolutionary War vs. Modern Cartridges. In his report, defendants' expert Stephen Hargarten argues, in effect, that the wounding effect and lethality of the modern AR-15 is so greatly out of proportion to that of the muskets known to the Founding Fathers when they wrote the Second Amendment that, had they but known how devastating the AR-15 was, they would never have given the people the right to keep and bear such arms.

Mr. Hargarten's arguments, summarized in the chart entitled "Summary" on the last page of his report, show that his data are inaccurate and his arguments should not be trusted.

His chart begins with three pistol calibers, which he names ".25 Caliber," ".32 Caliber," and ".40 Caliber." As to the first two of these, I note that, assuming he is referring to the .25 Auto (also called .25 ACP, the ACP standing for "Automatic Colt Pistol") and the .32 Auto (or .32 ACP), these are two underpowered, obsolescent pistol calibers, which most firearms experts consider to be inadequate for self-defense use. As to all three pistol calibers included in Mr. Hargarten's chart – the .25, the .32, and the ".40 Caliber" – by which I assume he means to indicate the .40 Auto (also called the .40 S&W) – I note he fails to indicate whether the bullet (projectile) types used for the ballistic gelatin testing were full metal jacketed (FMJ) rounds, jacketed hollow point (JHP) rounds, or some other type. This is significant because the diameter of the temporary cavity, energy lost by bullet while passing through the gelatin, and percentage of energy transferred by the bullet, will all be significantly greater when effectively-performing jacketed hollow points, or other efficient projectile types, are used, compared to full metal jacketed rounds, which produce temporary cavities only modestly larger than their permanent wound cavities.

The biggest problem I have with Mr. Hargarten's chart, however, is the line he entitles "Musket Ball," which he apparently intends the reader to accept as being accurate ballistic data for the musket balls fired in the Revolutionary War, and therefore presumably known to our Founding Fathers when they wrote the Second Amendment. The muskets most commonly used by both sides – that is, the British and the Americans -- in the Revolution were the British "Land Pattern" muskets, popularly known as the "Brown Bess" for reasons which appear to be

historically obscure, and secondarily the French-made Charleville muskets, of which the French gave the American revolutionaries some 25,000 in early 1777. The Brown Bess was nominally a .75 caliber musket (although manufacturing tolerances at that time are said to have varied greatly), while the Charleville was a .69 caliber arm. To allow for efficient ramming home of the musket balls as the musket barrels became fouled with black powder residue in battle, the round lead musket balls used by the troops were often .69 to .71 caliber for the .75 caliber Brown Bess, and .64 caliber for the .69 caliber Charleville muskets.

With that background, we now turn to Mr. Hargarten's chart. On the line titled "Musket Ball," he states the "Bullet Mass" in grams as 3.531 grams. 3.531 grams is 54.49 grains, about the same weight as the most commonly used 5.56mm NATO or .223 Remington ammunition fired in AR-15 rifles. Mr. Hargarten's chart, however, contains, a tremendous understatement of the mass of the musket balls most commonly used in the Revolutionary War. A .69 caliber lead musket ball, the size most often used in the Brown Bess muskets most often used by the colonial troops, weighs about 494 grains – **about nine times the weight of the "musket ball" shown in Mr. Hargarten's chart!** While the exact velocity of a musket ball exiting the muzzle of a Brown Bess musket is a matter of some dispute, and cannot be precisely duplicated today because of the inability to obtain the same gunpowder provided to the troops during the Revolution, velocities in the 800 to 1200 feet per second range seem to represent conservative, knowledgeable estimates. See, e.g., *Range, Power, Penetration, Velocity of a Brown Bess*, N.A. Roberts, J.W. Brown, et al., "Bow vs. Musket, April 29, 2019; *Test Firing Early Modern Small Arms*, P. Krenn, P. Kalas, et al., "Material Culture and Military History," *Muzzle Loading Shooting*, M. Vickery, W. Terry, et al., (1973); and *Small Arms and Ammunition in the United States Service*, Smithsonian Institute, *supra*. Using 1,000 feet per second as a conservative muzzle velocity for the Brown Bess, the muzzle energy in joules of a 494 grain musket ball would be 1,487 joules. While the correctly input bullet mass would invalidate the rest of the line in Mr. Hargarten's chart, if we presumed, as an example, that 77.1% of the musket ball's energy were transferred to the gelatin (which Mr. Hargarten presents as if this presumably duplicates the percentage of energy that would be transferred to the human body with a hit in some unnamed part of the human anatomy), the "Energy Lost by Bullet While Passing thru Gel" in joules – as shown in the next to last column of Mr. Hargarten's chart – would be 77.1% of 1,487 joules, or 1,146.477 joules, **not the tiny 111.27 joules, similar to that of an anemic .32 ACP bullet!** But this calculation is not accurate, as none of the numbers on that line of Mr. Hargarten's chart are accurate. Given that the entire purpose of this chart is to form the foundation for Mr. Hargarten's argument that the AR-15 is so horrifically more powerful, in joules of energy transferred to the target, than a Revolutionary War musket ball, that the Founding Fathers would never have allowed "the people" to keep and bear AR-15s, Mr. Hargarten's argument has no scientific legs on which to stand.

But it gets worse, for several reasons. First, Revolutionary War soldiers on both sides commonly loaded not just a single round lead musket ball, but topped the ball off with several round lead buckshot pellets, creating a so-called "buck and ball" load of the same type often used 90 years later by both Union and Confederate troops in the Civil War. The buck and ball loads increased the likelihood of hits, and can reasonably be assumed to have increased the lethality of the muskets at the close ranges at which they were commonly used. George Washington is said to have directed the colonial troops to load buck and ball from 1777 forward throughout the

Revolutionary War. The weight of a .33 caliber lead buckshot (size 00 buck) is approximately 54 grains. If the .69 caliber lead musket ball used in a Brown Bess musket was supplemented by three such buckshot pellets clustered on top of it in the paper cartridge, the total weight of the projectiles would be 656 grains, and Mr. Hargarten's chart would be even further from accurate.

See Exhibit 3, attached hereto, for a photograph showing the .69 caliber lead musket ball commonly fired from the Brown Bess, plus three .33 caliber lead buckshot that might be added to the musket ball to make up a "buck and ball" load, compared to the 55-grain, full metal jacketed .223 bullet most commonly fired in an AR-15 or similar rifles.

Finally, Mr. Hargarten fails to take into account the fact that a musket-ball or buckshot wound at the time of the Revolutionary War was far more likely to be fatal, or to have crippling consequences such as amputation of limbs, than a similar wound today, due to the greater effectiveness of emergency medical care today. At the time of the Revolution, there were no antibiotics, and medical care was primitive compared to today. The large, relatively slow musket balls often pulled dirty clothing into the wound with them, causing infection. The inability to restore circulation in limbs after blood vessels were severed often resulted in gangrene, treated by amputation of the limb. Compound fractures of bones often resulted in death.

An article by Dr. Atul Gawande published in the New England Journal of Medicine in 2004 entitled *Casualties of War – Military Care for the Wounded from Iraq and Afghanistan*, presented historical statistics on the lethality of wounds suffered in combat by U.S. soldiers since the Revolutionary War, based on U.S. Department of Defense data. The chart published in that article is attached as Exhibit 4. As shown in the chart, lethality from wounds received by U.S. soldiers during the Revolutionary War was 42%, compared to 30% lethality in World War II, 24% lethality during the Vietnam War, and 10% in our wars in Iraq and Afghanistan from 2001 to 2004, when the article was published. The Founding Fathers, at the time they wrote the Second Amendment, were clearly aware of the grievous effect of the muskets and rifles commonly used in the Revolutionary War which had just recently ended. Mr. Hargarten's argument that the Founding Fathers would never have allowed "the people to keep and bear Arms" if they realized how devastating modern arms might be is not supported by the actualities of medical history.

Misinformation About the 5.56mm/.223 Caliber Round, and Other Topics.

Defendants' experts make numerous misstatements about the AR-15's 5.56mm/.223 cartridge, always slanted to make this cartridge appear horrifically devastating, and unsuitable for any legitimate civilian use.

For example, Mr. Yurgealitis states, on page 19 of his report: "Because of the propensity of the 5.56mm/.223 round to create significant damage upon impacting living tissue, it is not generally considered nor favored as a hunting cartridge." See also Yurgealitis Report, p. 50, where he states: "Due to .223 caliber/5/56 mm bullets proven records of causing considerable tissue damage (when fired from an AR type rifle or pistol) it is a counterintuitive choice [for hunting]." Defendants' experts claim that some states ban the 5.56mm/.223 round for big game hunting because it is "too destructive." To the contrary, the truth of the matter is that states that permit rifle hunting for big game, but prohibit the use of the 5.56mm/.223 round

for that purpose, typically do so not because the cartridge is “too destructive,” but because they judge it to be ineffective and therefore inhumane as a big game hunting cartridge.

Regarding the destructiveness of this cartridge when fired at living tissue, destructiveness depends on many factors, including not only bullet weight and velocity, but bullet type (e.g., soft point, hollow point, full metal jacket, polycarbonate tipped) and bullet construction (e.g., the thickness and contour of the bullet jacket, etc.). Bullets (projectiles) for the 5.56mm/.223 cartridge range from 36 grain bullets at 3,750 feet per second (“fps”) or 40 grain bullets at 3,650 fps muzzle velocity (such as the Fiocchi V-Max), intended for hunting of prairie dogs and other small varmint animals, but also used by some police tactical teams and others to reduce the chance of overpenetration in indoor settings, to bullets weighing 75 grains or more, with muzzle velocities in the 2,750 fps range, used for long-range target shooting and hunting deer-sized game. I note here that the most commonly used 5.56mm/.223 round is the 55 grain full metal jacketed bullet, which typically produces muzzle velocities ranging from about 3,250 feet per second when fired in a 20” barreled rifle, to under 3,000 feet per second from a 16” barrel. By way of further comparison, the 5.56mm/.223 cartridge typically produces about 1,200 to 1,300 foot pounds of energy at the muzzle, while the 165 grain bullet from a .308 Winchester, a cartridge widely used for deer hunting, has twice the muzzle energy, about 2,700 foot pounds.

Another misleading piece of ballistic information concerns the maximum range of the 5.56mm/.223 round (properly termed the “maximum extreme range” to differentiate it from “maximum effective range,” which is much less). On page 40 of his report, Mr. Yurgealitis states, “the maximum range of these rifles is 2650-3000 meters. They were not designed, nor are they suitable, for home defense in short range close quarter situations.” To get a bullet to travel 3,000 meters (1.86 miles), one would have to point the rifle’s barrel up in the air at approximately a 40-degree angle. A lowly .22 rimfire (.22 Long Rifle, like Boy Scouts and other children learn to shoot at summer camp) can travel 1.25 miles or more. Even handgun bullets, such as the 9mm or .45 Auto, have maximum extreme ranges of 1.1 to 1.4 miles. The maximum extreme range of a cartridge is not a reasonable gauge of whether or not it is “suitable for home defense in short range close quarter situations,” as Mr. Yurgealitis puts it.

Any of the cartridges commonly used for self-defense can launch bullets into the next neighborhood, or even the next town, if fired up into the air. Hundreds of thousands of soldiers in our military have used 5.56mm/.223 rifles for “short range, close quarter situations” in urban combat and house clearing in Vietnam, Iraq, Afghanistan and elsewhere, and law enforcement agencies nationwide use AR-15 rifles for building entries, for serving search warrants and arrest warrants, and for other self-defense situations at short range, in close quarters. Hundreds of thousands of law-abiding citizens have apparently purchased AR-15 rifles for, among other things, self-defense use in and around their homes, businesses, farms and ranches. Mr. Yurgealitis’ opinion should not prevail over the opinions of our military, our law enforcement agencies, and hundreds of thousands of gun owners on what kind of firearms are suitable for defensive use.

Defendants’ expert Lucy Allen argues, in effect, that because the “average” self-defensive use of a firearm in which shots are fired requires only 2.2 shots, firearms with

magazine capacities over 10 rounds are unnecessary. I note that even trained law enforcement officers miss with most of the shots they fire in actual deadly-force confrontations. While no determinative figures are available on a nationwide basis, individual large law enforcement agencies that have kept their own statistics often show “hit ratios” by police in the range of only 20-35% in officer-involved shootings, meaning that 65-80% of the shots fired by police miss the suspect entirely. See, e.g., Morrison, G., “Police Handgun Qualification: Practical Measure or Aimless Activity?,” *Policing: An International Journal*, Vol. 1, Issue 3, p. 510-533 (1998); Morrison, G., “Latitude in Deadly Force Training: Progress, or Problem,” *Police Practice and Research*, 12(4):341-361 (August 2011). The NYPD, the country’s largest police department, has had individual years when its officer-involved shooting hit ratio has been as low as 11-15%. (Statistics taken from NYPD SOP9 reports, and NYPD “Analysis of Police Combat Situations.”) Firing multiple shots not only increases the chance that the officer will hit the threat altogether, it increases the chance of a hit in an anatomical area that may effectively stop the threat quickly, which is the goal of shooting. Secondly, handgun bullets are notoriously ineffective at causing instant incapacitation of a determined (or drug-crazed, or adrenalin-filled) attacker, so multiple shots are viewed by law enforcement – and by concealed carry and other self-defense handgun instructors -- as more likely to stop the threat before the threat/suspect inflicts deadly damage on the officer, home defender, or other innocent people. I have worked in cases in which trained police officers have hit their attackers with only one or two of the many shots they fired, and other cases in which the fact that a wounded officer’s handgun held 15-18 rounds allowed him to keep his attacker from closing with him and, in all likelihood, killing him.

The argument that no private individual “needs” a firearm with a capacity over 10 rounds because the “average” number of shots fired is 2.2 is, in my opinion, like arguing that the fire department doesn’t need an aerial ladder that reaches higher than the third floor, because there are “only a few” 4-story buildings in town, or that the police department’s SWAT team doesn’t need rappelling ropes longer than 100 feet because there are “only a few” structures in town where that length of rope will leave the officer dangling in midair, because he doesn’t have enough rope to reach the ground.

During the widespread looting and violent criminal attacks in New Orleans that followed Hurricane Katrina, or the looting, arson, and criminal attacks in cities across the United States following the George Floyd incident in May 2020, when police departments were overtaxed or completely unable to respond, many U.S. city dwellers would have viewed themselves as poorly armed indeed if what they had to defend their homes, businesses, and loved ones from mobs of criminals was a 5-shot revolver of the type recommended by defendants’ expert James Yurgealitis for concealed carry, or even the 8-shot revolver he recommends for home defense (see below). And is the private individual supposed to purchase two firearms, one for concealed carry and the other for home defense, as Mr. Yurgealitis’ recommendations appear to suggest?

The fact that Lucy Allen says the average number of rounds needed in a self-defense shooting incident is 2.2 – even if true – does not mean that individuals should not have more rounds, even more than 10 rounds, in case their situation is not the “average” one. “Average” means just that; that there are some instances where the number is smaller, and some where the number is larger. No one should be required to stake their life, or the lives of their loved ones, on an academically-derived “average.”

In addition, I note that the average number of shots, and maximum number of shots, was for those self-defense shooting instances that were statistically studied. There is no way to know that if additional self-defense incidents were studied, some might not be ones in which over ten rounds were fired by law-abiding individuals defending themselves and their families.

I also note that the data on the number of shots fired in the self-defense incidents studied was taken from newspaper articles. Having worked as an expert in shooting incidents for the past 39 years, I have learned that newspaper articles, and in fact “eyewitness” and “earwitness” accounts, are often extremely inaccurate. I have worked in cases in which: (1) an officer who admitted, immediately after the shooting, that he had fired twice, had in fact not fired at all, the shots having been fired by another officer from a different location; (2) in a public, daytime shooting, witness statements to police of how many shots were fired ranged from less than five shots to a dozen or more; and (3) police officers’ accounts of how many shots they have fired, and other details of the shootings, have been grossly inaccurate, often to the detriment of the officer. I have read newspaper articles about how someone “fired both barrels of his pump-action shotgun,” whereas the pump-action shotgun has only one barrel, not two. As an expert in shooting scene reconstruction, and an expert witness in shooting cases for nearly four decades, I certainly would not accept newspaper stories for accurate data on how many shots were fired.

Defendants’ expert Louis Klarevas states, on page 5 of his report, that “in terms of individual acts of intentional criminal violence, mass shootings presently pose the deadliest threat to the safety of American society in the post-9/11 era ...” While Mr. Klarevas’ careful wording of his statement may save it from being an outright untruth, the fact is that tens of thousands of individuals per year are killed by criminals, over 10,000 of them with handguns, while a tiny fraction of that are killed in mass shootings, whether with so-called “assault weapons” or other firearms. For example, FBI statistics show some 20,958 individuals in the United States were homicide victims in 2021, while 103 individuals, excluding the perpetrators, died in active shooter incidents. As stated in an article by the non-partisan Pew Research Center:

Regardless of the definition being used, fatalities in mass shootings in the U.S. account for a small fraction of all gun murders that occur nationwide each year.

What the Data Says About Gun Deaths in the U.S., John Gramlich, April 26, 2023.

Another opinion appearing from time to time throughout defendants’ expert reports is that the 5.56mm/.223 round is inappropriate for home defense because it can penetrate too many walls inside, presumably, the average home. The fact is that a shotgun firing buckshot (recommended by defendants’ expert James Yurgealitis, see below), and any of the commonly-used self-defense handgun rounds (including .38 Special, .357 Magnum, 9mm, .40 S&W or .45 ACP), will all go through one or more sheetrock walls, with enough retained energy to cause death or serious bodily injury in the next room, or sometimes even two rooms away. It behooves anyone firing inside a house or office building to know what is on the far side of any wall toward which he or she is firing. Given the low “hit ratio” in actual defensive shootings (see above), the greatest risk to innocent bystanders is not the risk of overpenetration, but the risk that the shooter

will entirely miss what he or she is shooting at. A 5.56mm/.223 projectile properly selected for indoor defensive use, such as a soft point or hollow point of between 40 and 64 grains weight, will have very little likelihood of overpenetrating (exiting) the human body with a solid torso hit. And the likelihood of hitting, rather than missing, is greatly increased by use of an AR-15, any similar rifle, or a pistol caliber carbine, compared to a handgun, as to which see below.

The American Public Should Not Be Required to Accept Mr Yurgealitis' Choice of Firearms for Self-Defense. On pages 49-50 of his report, Mr. Yurgealitis states his opinions about the types of firearms and ammunition he thinks are the best choices for private individuals for self-defense in their homes, and for concealed carry. The simple fact is that many Americans would, and do, make other choices, and when their lives and the lives of their loved ones are at stake, they should not be required to use the firearms and ammunition Mr. Yurgealitis thinks are best.

First, the Court should not equate Mr Yurgealitis' disparaging "spray and pray" comment (Yurgealitis Report, par. 149, p. 49) with the use of an AR-15 rifle, or with a handgun with a magazine capacity over 10 rounds. Someone using a 5-shot revolver can fire recklessly and hit unintended targets, while someone using an AR-15 or a 15-round magazine capacity Glock 19 can fire carefully controlled, precisely-aimed shots. The AR-15 is currently used by literally thousands of law enforcement agencies, including federal agencies, and most law enforcement agencies use handguns with magazine capacities over ten rounds. Certainly most of the officers in those agencies do not engage in a "spray and pray mentality" when using their firearms. Neither is a "spray and pray mentality" taught in any of the many concealed carry and self-defense firearms classes I have attended over the past 45 years.

For self-defense in the home, Mr. Yurgealitis recommends a pump-action shotgun loaded with 00 buckshot. (Yurgealitis Report, par. 150, p. 49) Moreover, he recommends that this shotgun be kept with its safety disengaged, so the homeowner can just pump a round into the chamber and fire it, and will not have to manipulate the safety in a stressful situation. I have personally used, and have trained hundreds of others, including private individuals, law enforcement officers, private security, and military personnel, to use pump-action shotguns over the past 40 years. I have taught nationwide as a contract instructor for O. F. Mossberg & Sons, one of the shotgun manufacturers Mr. Yurgealitis recommends. I have used, and trained others to use, pump-action shotguns in both of the sheriff's departments in which I have served. I have written technical articles evaluating pump-action shotguns, shotgun ammunition, and shotgun techniques. Based on the foregoing, my comments on Mr. Yurgealitis' opinions are as follows:

- The shotgun is too long and too heavy for many homeowners, especially females, to use comfortably and effectively.
- The shotgun has far too much recoil for many users; this leads them to fire it infrequently, with the result that they fail to achieve competence and adequate levels of familiarity and safety with the gun. This has even been true in many law enforcement agencies.
- 00 buckshot, the ammunition choice Mr. Yurgealitis recommends, will pass through several walls of typical house construction. I have demonstrated this many times to my classes of students using constructed sections of

plasterboard wall with 2x4 studs. I can easily demonstrate this to the Court by video.

- Safely storing a loaded shotgun in the home, especially a home which children or others who are not authorized to use the shotgun, is more difficult than safely storing a handgun in a quick-access lock box. In contrast, safely storing the loaded shotgun usually requires a gun safe.
- Pump-action shotguns are not simple to load, unload, or fire, and human errors in performing these functions are common. Stoppages (“malfunctions”) of the pump-action shotgun are hard for users to clear, especially under stress. These are among many reasons that some law enforcement agencies have switched to semiautomatic shotguns, and far more agencies have abandoned their shotguns altogether, transitioning to AR-15 rifles instead.
- Keeping shotguns with the hammer dropped and the safety disengaged, as Mr. Yurgealitis recommends, involves the significant danger that once the user chambers a round – which he or she should do in any self-defense situation – they are then holding a single-action weapon with a short, light trigger pull, and no manual safety engaged. In most defensive confrontations, what the defender must do with his or her firearm is not fire it. In other words, most defensive confrontations are resolved without shots being fired. Mr. Yurgealitis’ “safety off” method is poorly suited for this. I have personally worked as an expert witness in several cases in which having the safety disengaged on a shotgun has resulted in unintentional deaths, and I know of many others.

Mr. Yurgealitis recommends revolvers for self-defense by private individuals preferring handguns to the shotgun. See Yurgealitis Report, p 49, par. 151. Specifically, he recommends the eight-shot S&W Model 627 or Taurus Model 608, using .357 Magnum or .38 Special +P ammunition. Frankly, these revolvers are much larger and heavier than most private individuals would ever choose to carry concealed for self-defense. As home-defense firearms, I have the following comments about revolvers:

- Both .38 +P and .357 Magnum ammunition will easily penetrate several walls of typical house construction, which is something for which Mr. Yurgealitis criticizes the AR-15.
- Revolvers are considerably harder to shoot accurately than semiautomatic pistols, which is something to which most experienced firearms instructors can attest. This was confirmed by the shooting scores of thousands of law enforcement agencies nationwide when they switched from revolvers to semiautomatic pistols in the 1980’s and early 1990’s.
- The two revolvers Mr. Yurgealitis recommends have grip sizes and lengths and weights of trigger pull that are well suited to many males, but which are too large or too heavy for many female users.
- If revolvers were as efficient as semiautomatic pistols, why is it that one would struggle to find a single law enforcement agency anywhere in the United States that is still using revolvers as their primary issued service handgun?

On page 50, in paragraph 152 of his report, Mr. Yurgealitis mentions the Sig Sauer P229 in .40 S&W caliber, and the S&W Model 640 in .357 Magnum – handguns he was issued as an ATF Special Agent – in discussing firearms for concealed carry. As to these handguns, my comments are as follows:

- The P229, which I carried on duty in sheriff's department service in Indiana, is much larger and heavier than most private individuals would ever consider for concealed carry.
- The .40 S&W caliber round will penetrate several walls, and can endanger innocent persons two rooms away from the shooter, if the shooter misses his intended target.
- The S&W 640 in .357 Magnum has far more recoil than most shooters can handle competently.
- The recoil of the .357 Magnum in a revolver as small as the S&W 640 makes the gun unpleasant, and even painful, for some shooters to fire, to the extent that they will not practice with it often; this will result in the shooter not becoming adequately competent or safe with this revolver.
- The 5-shot capacity of the S&W Model 640 is minimal, at best, for self-defense. Most private individuals who carry a handgun for self defense will not carry a spare, flat magazine for their semiautomatic pistol, let alone a round, bulky speedloader for their revolver.
- Using a speedloader under the stress of a life and death confrontation is very difficult, and many individuals will not be able to perform it without considerable training and practice. "Considerable training and practice" does not describe most private individuals' use of their self-defense handguns.
- The very short sight radius of the S&W Model 640, and the difficulty of firing a revolver altogether, greatly reduce the accuracy with which this revolver is likely to be fired in a life-or-death confrontation. In a case I just finished working on as an expert, a trained police officer, firing a revolver of this size at an attacker who was only 6-8 feet away from him, hit the attacker in the torso with one shot, hit the attacker in the ear lobe with a second shot, and fired a third shot which missed the attacker completely. The two shots other than the torso hit flew through a public parking garage and toward a busy street, with obvious risk to the public. That was the performance of a trained police officer, not a private individual. A snubnosed-revolver such as the S&W 640 is a poor self-defense choice for most private individuals.
- Mr. Yurgealitis' recommendation of a 5-shot revolver for concealed carry, and a shotgun or 8-shot revolver for home defense, means that to follow his recommendations many homeowners and other private individuals would need to purchase two guns, not just one. This presumes that the cost of buying two guns, buying accessories and ammunition for two guns, and training and practicing with two guns, is no problem, which it very well may be.

The point of all my above comments about Mr. Yurgealitis' recommendations of firearms and ammunition for the American public to use for self-defense, whether in their homes or for any other self-defense use, is not that the Court should accept my opinions rather than

those of Yurgealitis. Rather, it is simply that the Court should understand that individuals have their own particular abilities, needs, physical attributes, budgets, and opinions. The American public should not be limited to the firearms that James Yurgealitis thinks are best. His recommendations may, indeed, be excellent choices for him, but not for someone else.

Conclusion

All of the facts and opinions I have expressed in this report are accurate to a reasonable degree of professional certainty in my fields of expertise.

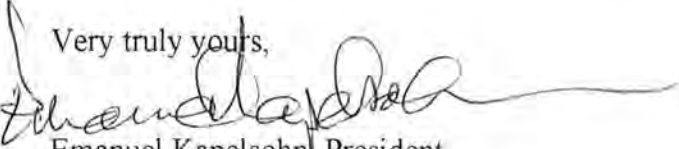
Very truly yours,

Emanuel Kapelsohn President



EXHIBIT 1



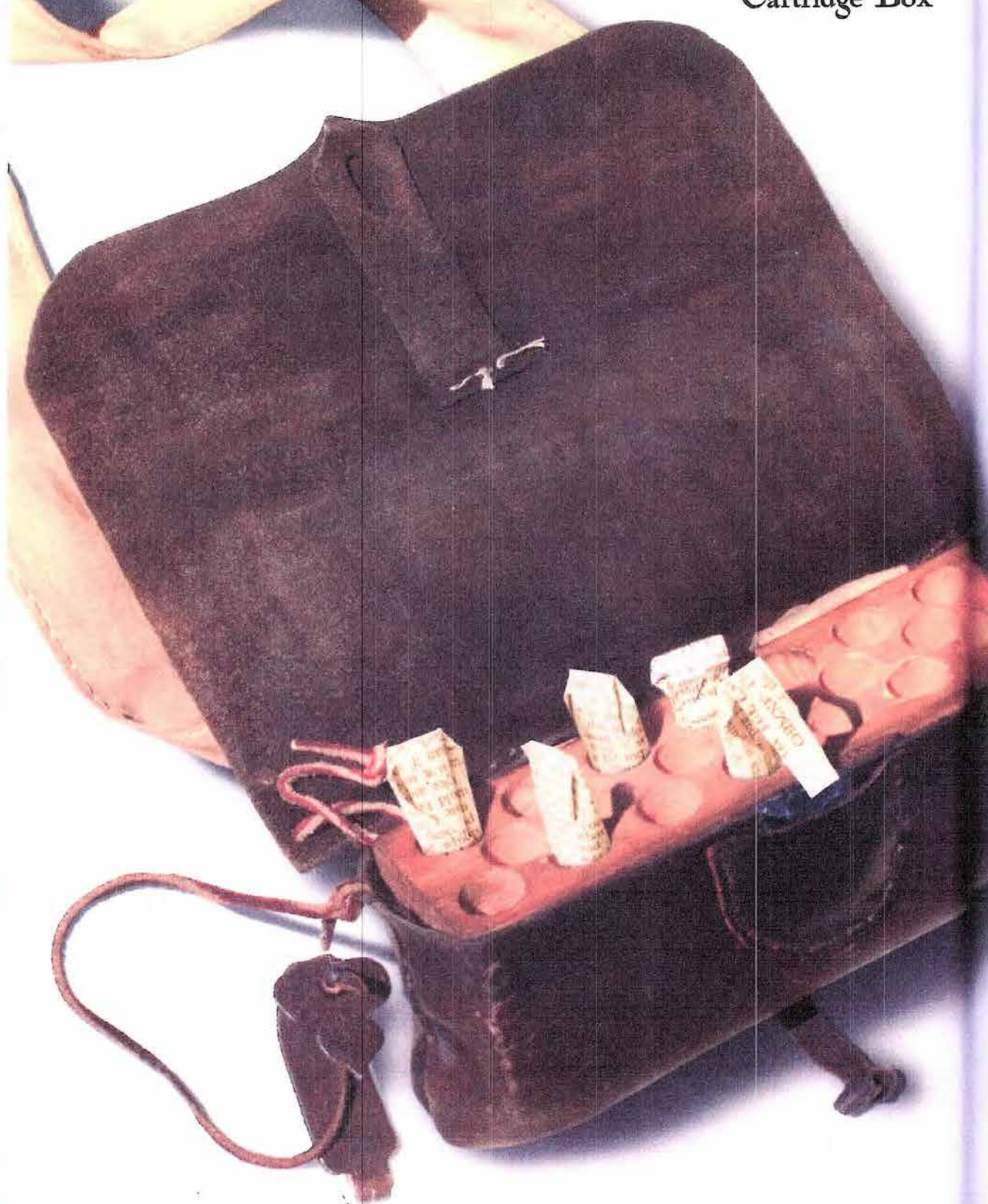
Paper cartridge, with musket ball and buckshot such as might be contained in it. Collection of Washington Crossing Historic Park.



Revolutionary War cartridge box. Collection of Washington Crossing Historic Park.

Revolutionary War cartridge box with five paper cartridges. From
Soldier of the American Revolution, D. Hambucken and B. Payson.

Cartridge Box





Revolutionary War re-enactor with musket and cartridge box. Washington Crossing Historic Park.

Revolutionary War re-enactor removes
cartridge from cartridge box.
Washington Crossing Historic Park.





Reproduction Revolutionary War cartridge box with seven paper cartridges. Washington Crossing Historic Park.

EXHIBIT 2



GI-type pouches for 12-gauge shotgun shells.



Modern rifle ammunition belt pouch.

EXHIBIT 3



.69 caliber lead musket ball for Brown Bess, with three lead buckshot for "buck and ball" load, compared to a .223/5.56mm 55-grain full metal jacket bullet.

EXHIBIT 4

Lethality of War Wounds among U.S. Soldiers.*			
War	No. Wounded or Killed in Action	No. Killed in Action	Lethality of War Wounds
			%
Revolutionary War, 1775–1783	10,623	4,435	42
War of 1812, 1812–1815	6,765	2,260	33
Mexican War, 1846–1848	5,885	1,733	29
Civil War (Union Force), 1861–1865	422,295	140,414	33
Spanish-American War, 1898	2,047	385	19
World War I, 1917–1918	257,404	53,402	21
World War II, 1941–1945	963,403	291,557	30
Korean War, 1950–1953	137,025	33,741	25
Vietnam War, 1961–1973	200,727	47,424	24
Persian Gulf War, 1990–1991	614	147	24
War in Iraq and Afghanistan, 2001– present	10,369	1,004	10

* Data are from the Department of Defense.^{1,3}



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July 31, 2023

Daniel L. Schmutter, Esq.
Hartman & Winnicki, P.C.
74 Passaic Street
Ridgewood, NJ 07450

Re.: Supplementary Letter - Ellman, et al. v. Platkin, et al., and Ass'n
of New Jersey Rifle & Pistol Clubs, Inc. et al. v. Platkin, et al.

Dear Attorney Schmutter:

I am writing to provide a brief supplement to my initial report of June 15, 2023 ("Initial Report") and my reply report of July 17, 2023 ("Reply Report") in the above-referenced cases.

In my Reply Report, I discussed the ballistics of the Brown Bess musket, which was the shoulder weapon most commonly used by both the British and the American ("Continental") troops in the American Revolution. See Reply Report, pages 7-9.

After submitting my Reply Report, I received additional information supporting the facts and opinions provided in that report. Information I received included the following:

The Lead Historic Weapons Supervisor at the Valley Forge National Historical Park (U.S. National Park Service) sent me several articles providing research on the ballistics of 18th Century flintlock muskets, including the Brown Bess. The most relevant of these articles are *A Detailed Study of the Effectiveness and Capabilities of 18th Century Musketry on the Battlefield*, N.A Roberts, J.W. Brown, B. Hammett, and P.D.F. Kingston, Koninklijke Brill NV, Leiden, 2008; *Colonial Era Firearm Bullet Performance: A Live Fire Experimental Study for Archaeological Interpretations*, D. D. Scott, J. Bohy, N. Boor, C. Haecker, W. Rose and P. Severts (2017); and *Shooting the Past: Colonial & Revolutionary War Firearm Live Fire Experiments & Spherical Ball Performance*, J. Bohy, American Society of Arms Collectors Bulletin 118:44-46 et seq. These articles are provided herewith as Exhibits 1, 2 and 3, respectively.

One of the articles (Scott, *supra*, at 20, 23 ff.) made reference to ballistic testing of the Brown Bess musket by a nationally-known firearms and ballistics expert, Lucien ("Luke") Haag. Among other things, Luke Haag has been prominent in AFTE (the Association of Firearms and Toolmark Examiners), and is the author of one of the leading texts on shooting scene reconstruction. After reading the reference to Haag's work with the Brown Bess, I called him

and discussed Brown Bess ballistics. Following our phone conversation, Mr. Haag emailed me several PowerPoint presentations he had previously prepared on his testing of muzzleloader ballistics. A copy of his PowerPoint, *March 7, 2015 Tests at Ben Avery Range, .72 Cal. "Brown Bess,"* Slides and Calculations by Luke Haag, Forensic Science Services, Inc., presenting the test results for the Brown Bess musket is attached as Exhibit 4.

Finally, before preparing my Reply Report I had spoken by telephone with Mr. Harold Coleman of the National Muzzle Loading Rifle Association. He offered to speak with several of his association's members who shoot Brown Bess muskets, regarding that firearm's ballistics. After submitting my Reply Report, I heard from Mr. Coleman that, based on information provided to him by Brown Bess shooters, velocities with round lead musket balls could easily range from about 800 to 1200 feet per second. The lower velocities would be achieved when no wadding was wrapped around the musket ball, while the higher velocities would be reached when the cartridge paper was left wrapped around the ball as it was rammed down the bore in loading, so that the paper served to make a better gas seal when the gun was fired. Mr. Coleman said that members would be glad to provide specific velocity results of chronograph testing if requested.

Based on the above, the modern ammunition and projectile that provides the closest comparison to the .69 caliber, 494-grain lead round ball fired from the Brown Bess musket at velocities averaging about 1,000 feet per second during the Revolutionary War is the 12-gauge rifled slug. Widely used by law enforcement agencies, by hunters of deer and black bear, and by hunting and fishing guides for protection against grizzlies and other large, dangerous animals, 12-gauge rifled slugs are .729 caliber, and weigh one ounce (437.5 grains). When fired from the shorter barreled shotguns typically used by police and big game hunters, 12-gauge rifled slugs, in either standard loading or in the popular "low recoil" versions, often produce muzzle velocities in the range of 1,150 to 1,300 feet per second. Thus, the 12-gauge rifled slug is similar in caliber to a Brown Bess musket ball, slightly lighter in weight, and slightly faster in muzzle velocity. The practical effective range of a 12-gauge rifled slug is about 100 yards, about the same as the practical effective range of the Brown Bess musket. There is general agreement among firearms users that within its effective range, the 12-gauge rifled slug is devastatingly effective as a law enforcement or self-defense round, or for use in shooting animals the size of deer or bear. A photograph comparing the .69 caliber lead musket ball used in the Brown Bess to the 12-gauge rifled slug is attached as Exhibit 5.

Of particular interest are the observations of the author of the Roberts, et al. article, *supra*, at pages 15-16, regarding the ballistic gelatin testing of .69 caliber Brown Bess musket balls at 150 and 75 yards, representative of likely battlefield musket engagement distances. Regarding the 150-yard effect, the authors noted:

The maximum permanent cavitation was around 40 mm. It is assessed that this level of damage to the ballistic gelatine block represents a catastrophic effect on a human torso at the likely maximum distance of engagement, assuming a strike to the torso.

Regarding the 75-yard effect of the Brown Bess musket ball, the authors noted:

The temporary cavitation is much greater at 75 yds compared to 150 yds, meaning that considerably more damage would have Occurred, that would almost definitely have been fatal.

Attached as Exhibit 6 is a photograph showing a .69 caliber lead musket ball and various military and sporting cartridges in use from the late 1880's to the present time, compared to the .223/5.56mm AR-15 cartridge. From left to right, the munitions in Exhibit 6 are:

- 1) .69 caliber lead musket ball, as used in Brown Bess muskets in the Revolutionary War;
- 2) .303 British, introduced in 1888 and used by British, Canadian and Australian military forces in World Wars I and II;
- 3) .30-40 Krag, used in the U.S. military Krag-Jorgensen (M1892 Springfield) rifle, adopted by our military in 1892, used in the Spanish-American War, and until 1903;
- 4) .30-30 Winchester, first offered in 1895 in the Model 1894 Winchester lever-action rifle, and a popular cartridge for hunting deer-sized game to this day;
- 5) .30-06 Springfield, developed in 1906, used as the primary U.S. military cartridge in World Wars I and II and the Korean War, and a popular big-game hunting cartridge to this day;
- 6) 7.62x39mm cartridge, developed in 1947 for the AK-47 rifle;
- 7) 7.62mm NATO, developed from the commercial .308 Winchester in the early 1950's and used in the M14 rifle and M60 machine gun in Vietnam, and a popular hunting, law enforcement, and competitive target shooting cartridge today; and
- 8) The AR-15 cartridge, developed as the .223 Remington in the 1960's for civilian use, and slightly modified to become our U.S. military rifle cartridge as the 5.56mm NATO in the late 1960's through early 1970's.

I note that after over 50 years of attempting to improve the 5.56mm NATO's shortcomings in power, range, and penetration, the U.S. military is now transitioning to a 6.8mm cartridge for its infantry rifles and squad automatic weapons. The new 6.8mm cartridge will have a larger-caliber projectile that weighs roughly twice as much as the 5.56mm bullet, for improved range, penetration, and energy.

Note of the information I have received after submitting my Reply Report serves to change my opinions expressed in that report, or in my Initial Report of June 15, 2023. The newly-received information simply further supports and confirms my previous opinions.

All of the facts and opinions I have expressed in this letter are accurate to a reasonable degree of professional certainty in my fields of expertise.

Very truly yours,

Emanuel Kapelsohn

EXHIBIT 1

A DETAILED STUDY OF THE EFFECTIVENESS AND CAPABILITIES OF 18TH CENTURY MUSKETRY ON THE BATTLEFIELD

N A ROBERTS, J W BROWN, B HAMMETT & P D F KINGSTON

ABSTRACT

During the mid 18th century, the standard British Army issue weapon was the Brown Bess Musket. There are various accounts of the performance of this early form of firearm and its tactical deployment (e.g. Hanger 1816). Using a technical replica of the Brown Bess, range trials and computer modelling have been used to assess the weapon's capabilities and likely performance. The research found the Brown Bess musket to be a lethal weapon at the ranges at which enemy was commonly engaged, so long as it was accurate enough to hit the target. A single shot fired at 150 yards could penetrate at least two soldiers, even if bone were hit. The armour of the day (shields of wood, leather and sometimes steel, and the layers of woollen clothing) was easily pierced by the shot. The shot was found to readily deform on impact with metal targets. The maximum range could extend to around 1200m, with 202m reached when fired horizontally.

Introduction

Background

The nature of warfare is always dictated by the principle weapon systems available at the time. In the 18th century, the principle weapon system used by the British infantry was a smooth bore musket. The weapon was employed in platoon-sized groupings, which fired volleys of lead shot in the direction of the enemy (shots were not aimed). The musketeers would form a static location in front of an advancing enemy, or fire while advancing until close enough for hand-to-hand combat. It is clear that the performance of the musket would have a direct influence on the tactics and the outcome of the battle. However, historical sources provide many conflicting accounts of the capability, performance and reliability of this weapon system (Hughes 1974). Perhaps the most often quoted reference comes from the hand of Colonel George Hanger who saw service with the British Army during the American Revolution:

'A soldier's musket, if not exceedingly ill-bored, as many are, will strike a figure of a man at 80 yards; it may even at a hundred; but a soldier must be very unfortunate indeed who shall be wounded by a common musket at 150 yards, providing his antagonist aims at him; and, as to firing at a man at 200 yards with a common musket, you may as

well fire at the moon and have the same hope of hitting him. I do maintain and I will prove, whenever called on, that no man was ever killed at 200 yards, by a common musket, by the person who aimed at him (1816: 205).'

Aim

The aim of this research project was to conduct a thorough ballistic examination and provide a performance assessment of an 18th century musket. In recent years, there has been an increasing interest in the examination of the performance and capabilities of historic firearms, including artillery, through experimentation and replication (e.g. MacPherson 1994; Pollard & Oliver 2003; for a detailed study of cannon-fired case shot, see: Allsop & Foard 2007). This interest has also been reflected through the activities of hobbyist black powder shooters, most particularly in the USA (e.g. James n.d.). The project focused on the investigation of the Brown Bess Musket as used by the British Infantry at the Battle of Culloden on 5 April 1746. This battle is of particular interest as archaeological investigations have resulted in the recovery of numerous lead projectiles including musket balls and the present project received support and encouragement from Dr Tony Pollard, the archaeologist leading that work. This weapon was widely popular, and remained in use without major modifications until the 1800s, when rifles eventually made smooth bore muskets obsolete.

Approaching the problem

Due to the value, scarcity and deterioration of original Brown Bess Muskets, the firing of a technical replica Brown Bess was the most appropriate method of analysing the ballistic properties. Using a technical replica, with similar bore and barrel dimensions to the original, would ensure more consistent experiments could be carried out.

Range trials were conducted with the aim of replicating the known performance (particularly muzzle velocity) of the Brown Bess. Computer modelling was used concurrently to maximise the information obtained from each trial. The conditions derived from these trials enabled the setting up of accurate and realistic tests examining the wound effects the weapon could inflict in different tactical situations (such as closer ranges and differing amours). The effect of impact on the lead shot was also examined by using a soft capture box.

The Brown Bess

The historical context for this research project was the Battle of Culloden, where the British Infantry used the Brown Bess Musket. Existing documen-

tary evidence of the performance of the Brown Bess from the majority of sources tends to provide a historical, rather than technical perspective. This project used technical methods to address the accuracy and veracity of these historical records. It is known that the weapon weighed around 10 lbs 8 oz (4.7 kg), had a 46-inch length barrel with a 0.75 inch (1.87 cm) bore diameter. The shot fired was 14 bore lead, contained in a cartridge made of hemp and cotton paper.

Description of the Brown Bess Musket

Capability

It should be borne in mind that the capability of the small arms system is not merely a function of the capability of the weapon. The human-weapon interface plays an important role, resulting in fluctuations in a soldier's performance depending on his size, physical state (tired, cold, wet), and mental state (scared if in battle). His weapon handling under these conditions will be improved by good training, which should go some way to minimise the effects of these conditions. The investigation of these variables falls out of the scope of this project, and a rigid mounting for the weapon was used to eliminate human variation. This allowed the investigation of purely the ballistic capabilities of the Brown Bess, operated at similar ranges to those fired during the Battle of Culloden (Pollard 2005).

Ammunition

The ammunition cartridges were made of paper containing one lead shot and a quantity of gunpowder, and tied off with twine. The concept of using cartridges was introduced to make firing the weapon easier whilst ensuring a more consistent amount of gunpowder. It also assisted in keeping the powder dry and reduced windage (the small gap between the lead shot and the calibre of the barrel) as the paper also served as wadding (see below).

Propellant

Little evidence exists as to the exact scientific details of the gunpowder used, but it is believed to be a mixture of saltpetre, charcoal and sulphur in the ratio of 75:15:10, and of mixed grain size. The amount in each cartridge was between 5 and 6 drams (8.89 to 10.66 g), of which 10 grains (0.65 g) was used for priming (Harding 1999: 105).

Cartridges

The lead shots used in the cartridges were cast in moulds and quenched in water. A small burr was left from where the lead was poured into the

mould. Paper used to make cartridges in the 18th century differs from today's paper, as it was made from a linen or cotton texture, like fine rags. The lead shot was placed at the bottom corner of the paper, which was then folded over it. The cartridge was rolled by using a wooden rolling rod (0.65 in diameter) to form a cavity for gunpowder. The end with the shot was tied off with twine, and the gunpowder poured in through the open end.

Operation

Musketeers would bite off the end of the cartridge, pour a small amount of gunpowder into the flintlock pan, with the remainder being poured down the barrel. The shot was then rammed down the barrel with a rod and the cartridge paper became wadding. This protected the shot during ramming, held it in place between loading and firing, and provided forward obturation during shot travel down the barrel. On pulling the trigger, a flintlock produced a flash that ignited the powder in the pan, burning through a tiny hole into the chamber. This would then ignite the gunpowder confined inside, producing rapidly expanding hot gases that forced the lead shot and the wadding out of the barrel. In this simple explanation of the firing procedure, it is already obvious how much room for variation there would be, potentially affecting the ballistic performance.

Muzzle Velocity

When examining the performance of a small arms weapon, muzzle velocity is the conventional measurement taken. Unfortunately, there are no records of the muzzle velocities of the Brown Bess from the mid 18th century, and not many experiments appear to have been conducted in that era. However, Mordecai (1845) conducted a series of experiments in the mid-19th century which can be extrapolated to estimate the likely muzzle velocity of the Brown Bess. The gunpowders he used were mainly from the US, but the figures obtained generally corroborate the data for the few British powders that he tested. Robins also conducted research on ballistics, published in 1742, which along with Mordecai's work, show that muzzle velocities of 1500 feet per second (fps) or 457.2 metres per second (m/s) were being obtained from muskets (Harding 1999: 371). The velocity of sound in air is 1100 fps, showing that the projectile travelled at supersonic speeds.

Until manufacturing processes were improved in the late 18th century, gunpowder was extremely variable in quality (Nonte 1969: 191). There were numerous reasons for this, including: inconsistencies in the charcoal produced by charring timber in stacks; the type and age of wood used; impurities in the saltpetre and sulphur; and method of formulation and mixing. When in

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use, this resulted in unpredictable muzzle velocities on firing the weapon. The tactical manner of using soldiers in long lines firing in the general direction of the enemy, however, meant that variations in muzzle velocity did not matter greatly for battlefield effectiveness.

The Battle of Culloden

Background

The Battle of Culloden took place on the afternoon of 6 April 1746. On one side were 5,000 Jacobite troops (including Highlanders, Lowlanders, some French and a few Irish), equipped with muskets, pikes, axes and other hand-held weapons, commanded by clan chiefs loyal to Bonnie Prince Charlie. Their enemy numbered around 9,000 Government troops, well equipped with the Brown Bess musket. The Jacobites were tired after an unsuccessful attempt at a surprise attack the previous night, which had failed due to navigational errors. At the start of the battle, the government lines stood around 500 m away, separated by ground entirely unsuitable for the traditional Highland charge (victory at Killiecrankie in 1689 resulted from Jacobites charging down hill—the ground at Culloden was variably wet and despite various topographic variations was far more level in character).

As a precursor, both sides engaged with artillery, first in counter-battery fire, with the Government guns then switching to the Jacobite infantry once the artillery had been knocked out. When the order to charge was given the message was not passed properly, and the Jacobite advance became dislocated. While charging to engage in hand to hand fighting, the Jacobites suffered further attrition from heavy volley fire from the Brown Bess Muskets of the Government troops. They did break through the Government lines in some places, but were defeated by depth in the Government lines. A disorderly retreat followed, and combined with successful flanking manoeuvres by the government cavalry, the Jacobites were routed in less than an hour. Government losses were just 350 men dead and injured compared with at least 1,200 Jacobites dead.

Tactics

The Government troops employed volley fire from their muskets. This broke down charges, and reduced numbers of enemy able to engage in hand to hand fighting. Ranges varied from around 150 yds down to point blank range. The soldiers were told not to aim, but simply hold the weapon horizontally and fire. Although firing by platoon was normal by the time of the battle this was dispensed with in favour of volley fire by battalions deployed in triple

lines—thought by General Hawley as the only way to break a Jacobite charge. The front rank, probably kneeling, kept their bayonets charged and did not reload after the first volley, thus providing a protective hedge of bayonets in front of the two firing ranks (Reid, in press).

Historical Sources

Some sources would suggest that the Brown Bess did not perform well ballistically, proposing that shot penetration of the body was rare, and could be prevented by wet clothing or shields. Contradicting this, there was also circumstantial evidence that a single shot could penetrate two men standing one behind the other. There are also doubts about accuracy over engagement ranges, and the wounding characteristics that were produced:

Accuracy of the Brown Bess was, as with other muskets, low. The effective range is often quoted as 100 yards (91.4 m). The combination of large calibre of the projectile, the heavy weight of its lead construction, and its unstable aerodynamic shape (a round ball marred by hand casting) contributed to its low effective range (historical plaque at battle site).

It is my conclusion that effective musket fire was not possible at ranges above 150 yards. This echoes the sentiment of some contemporary writers. Furthermore given the poor field conditions and the little or no target practice that the conscripts had, really effective fire could probably not be delivered at ranges above 100 to 150 yards (Willegal, 1999: 9).

There has also been a modern fascination with the supposed high recoil resulting from firing a Brown Bess. It is believed by some that government soldiers lessened the painful effects of this by reducing the amount of powder rammed down the barrel. This would reduce the muzzle velocity of the shot, and so affect the range, accuracy and penetration of the shot. Finally, further to a recent find of interestingly deformed shots from the site of Culloden (Pollard 2005), trials were conducted to simulate the lead shot colliding with metal edges, such as sword blades or belt buckles.

Replicating the Brown Bess

Weapon Selection

The aim of this project was to, as realistically as possible, analyse the ballistic properties of the 18th century Brown Bess musket. An ideal way to have done this would have been to acquire, test fire, and measure the performance of an actual Brown Bess musket. However, while considering the use of an original or replica musket, a number of practical issues became immediately apparent.

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Firstly, original 18th century Brown Bess muskets are now historical artefacts, and could be considered more works of art than functioning weapons. Even though an original musket could be obtained, preserving the condition of the weapon could not be guaranteed with the range of conditions under which it would have been fired. Furthermore, the material integrity of a 250 year old weapon would have posed a potential safety hazard to personnel and property at the experimental range.

Secondly, consideration was given to using a replica Brown Bess, which would at least solve the question of material integrity. However, given the range setup, properly mounting the weapon for repeatable firings proved to be unworkable without causing damage to the weapon. Limited finance was also a limiting factor for this option. It was therefore decided that a technical replica musket, which matched the pertinent specifications of the Brown Bess, would be designed, fabricated, and used during the project's experimental firings.

Design and Operation of the Technical Replica Brown Bess

The design of the technical replica Brown Bess was kept very simple. A 42 in (1066.8 mm) long EN 24 steel tube was used to replicate the barrel. The inner diameter of the tube was 19 mm, which closely matched the Brown Bess's 0.75 calibre. The tube's wall thickness was 3 mm thicker than the original Brown Bess's barrel. This was chosen to ensure safety on the range, whilst having a negligible effect on the ballistics of the weapon. It allowed varying amounts of gunpowder to be used knowing that the barrel would not fail under the high pressures.

The chamber end of the barrel was threaded to accept an adapter used to fit the barrel in the firing mount found at the Small Arms Experimental Range (SAER). An off-axis cavity was drilled into the side of the adapter to replicate the musket's flashpan. A 2 mm touch-hole was drilled through this cavity into the chamber of the barrel. In this way, gunpowder initiated in the cavity would ignite gunpowder in the chamber via the touch-hole causing the replica to function in the same manner as the flintlock Brown Bess. The gunpowder in the flashpan was initiated remotely using a Vulcan Fusehead (an electric matchhead), 20 ft of copper wire and a 9 V battery.

The replica Brown Bess was therefore a series of screw thread applications put together to measure safely the performance of the weapon in a controlled environment. Table 1 shows a summary of specifications for the Brown Bess technical replica.

<i>Property</i>	<i>Details</i>
Calibre	19.05 mm
Barrel Length	1066.8 mm
Shot Diameter	17.53 mm
Touch-Hole Diameter	2 mm
Loading Method	Muzzle Loaded
Firing Method	Electrically
Bore Type	Smooth

Table 1. Brown Bess Technical Replica Specifications

The Replica Cartridge

Paper

The paper used for the replica cartridge was obtained from Falkiner Fine Papers of London via their manufacturer, Griffen Mills in the Republic of Ireland, and mirrored as closely as possible that used in the 18th century. The paper type used was called 'Wove', made from a blend of cotton and hemp fibres, cream in colour and weighing 80 g/m² (about 0.004 in in thickness). The cartridge paper was cut to size and rolled as described earlier to incorporate the lead shot, before pouring in the gunpowder. Thin strands of parcel string were used to replicate the twine.

Shot

There was much debate about the purity and density of lead used in the 18th century for the shot. The shot used in this research was cast from pure lead, identical to that used for roofing houses. Using modern day moulds, the shot was cast in the traditional method by the 'Muzzle Loaders Casting Shack' in Clacton on Sea. Research suggests that during the Battle of Culloden in 1746, the Brown Bess fired 14 bore lead shot. The closest obtainable match to this was 0.691 inches in diameter, which was used during the research.

Gunpowder

Gunpowder is not now made to the same standards or using the same process as in the 18th century (Buchanan 1996). The old method involved using a pestle and mortar to incorporate the saltpetre, sulphur and charcoal; a process which would last up to eight hours. This would now contravene modern safety regulations, so it is not possible to replicate this important step.

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Even if it could be attempted, it would be virtually impossible to match all the characteristics of the powder exactly due to the complex nature of gunpowder. Additionally, as mentioned previously, the gunpowder was extremely variable in quality. Therefore, replicating true 18th century gunpowder would involve incorporating a degree of inconsistency.

A partial aim of this project was to assess the ballistic properties of a Brown Bess, it was decided to use modern gunpowder in order to ensure reliability when examining the ballistic effects. Due to lack of records, the specifications of the powder used in the Brown Bess are unknown, although there is circumstantial evidence to suggest that it was of mixed grain sizes. Three modern day gunpowders were obtained: Black powder Type 3A (fine); G12; and blasting powder, with the aim of testing them individually and mixed, in order to find the closest match to 18th century gunpowder. Measuring the muzzle velocity would give an indication of how similar in terms of power each gunpowder was to that used in the 18th century.

Computer Modelling

Internal Ballistics Modelling

The program used to model the internal ballistics of the Brown Bess technical replica was HMSOV, which was created with the Matlab computing language. By inputting the weapon's specifications (and making realistic assumptions where necessary), the program calculated muzzle velocity, peak pressure, and defined a pressure/travel history curve. Three input files were created; one to represent each of the charges used: 7.5 g, 10 g, and 15 g.

Defining the Parameters

An input file was used to define the parameters of the projectile. These parameters included muzzle velocity, projectile mass, shot calibre, angle of elevation, initial height, and coefficient of drag (C_D). Based on the input parameters, the external ballistics modelling program calculated the trajectory. For every metre of range, the program output listed values for total velocity, horizontal and vertical components of velocity, vertical displacement, C_D , Mach number, and elapsed time.

Calculating Muzzle Velocity

Once the likely muzzle velocity of 1500 fps (457.2 m/s) was identified through the use of data from historical sources, it was a simple matter of

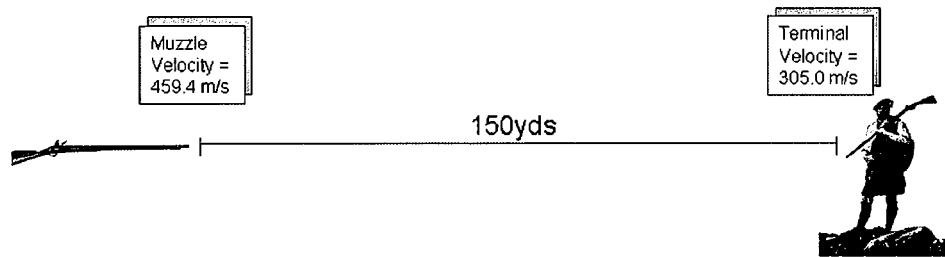


Fig. 1. Terminal Velocity measurement for an historical engagement

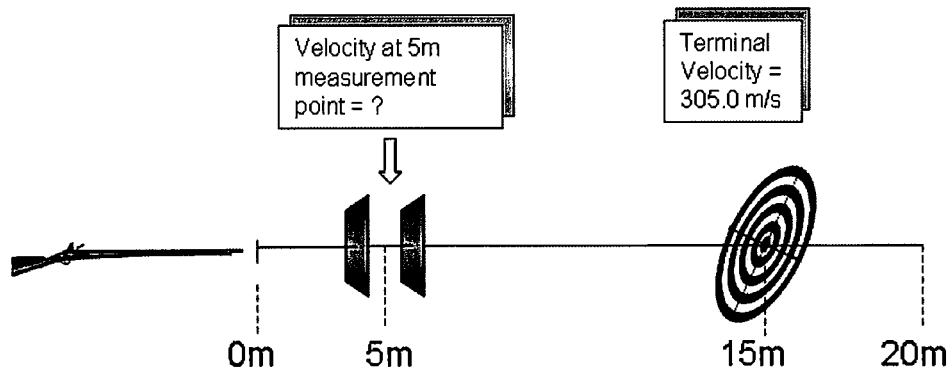


Fig. 2. Range scaling for target at 15 m on a 20 m range

defining parameters for the input file to determine what the terminal velocity would be at a given target range. Normal engagement ranges during the 18th century have been quoted as being 150 yards (137 m). The output data found the terminal velocity at a 137 m target would be approximately 304 m/s. It should also be noted that when fired from a height of 1.5 m (roughly shoulder height), at 137 m the shot would have dropped to approximately 0.9 m above the ground. Also, if no target were hit, the shot would travel until it hit the ground at approximately 201 m.

The external ballistics modelling program also aided in the design of the terminal ballistics experiments. For simulating a 150 yd engagement, and with a muzzle velocity of 459.4 m/s from range data, the computer model predicted a terminal velocity of 305 m/s, as depicted in Fig 1.

To simulate this engagement on the 20 m firing range (with the target located at 15 m), it was required to know what velocity needed to be registered at the measuring point 5 m from the barrel, as shown in Fig 2. The 127 m entry in the output file (137 m-10 m) indicated that the velocity at that point will be 313 m/s. Thus, by measuring a velocity close to 313 m/s

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on the range, it could be confidently estimated that the terminal velocity would be near the expected value of 305 m/s.

Maximum Range

As the replica musket could only be fired using the clamp at the 20 m range, maximum range could not be measured practically. Ballistic modelling was therefore also employed to predict the maximum range achievable, and at what angle of elevation this would occur. By inputting the relevant parameters, it was found that around 1,200 m could be reached when firing at 35° of elevation, compared to 202 m when firing horizontally.

Ballistic Experiments

Experimental set up

All of the trials were conducted at the Cranfield University SAER; an indoor range with a remote firing capability and ability to fire replica barrels. The replica musket was mounted in a clamp which eliminated human based firing variations. Equipment was available for measuring projectile velocity as well as weighing facilities for gunpowder. The cartridges to be fired were pre-made using the method described previously. The replica musket was positioned in a clamp at the end of the 20 m range. Aluminium laminates mounted in stands were used to measure shot velocity.

Preparing the Cartridge

The gunpowder was weighed out at the range and then placed inside the cartridge, with 0.65 g of the total amount weighed separately to be used for priming. The quantity and type of gunpowder used varied depending on which experiment was being conducted. Exact details are described in the methods later in the Chapter. After fixing the replica musket in the stand, the cartridge was loaded into the barrel in the same manner as used in the 18th century: the top of the cartridge paper was bitten or ripped off, and the powder it contained placed into the barrel.

Loading the Cartridge

As the barrel was fixed in the stand, it was not possible to tilt the weapon and pour the powder down the barrel. Instead, a small scoop mounted on a wooden pole was used. The powder was poured onto the scoop, inserted in the barrel and emptied at the chamber end of the barrel. The remainder of

the cartridge was then inserted down the barrel using a ramrod. The paper end went in first in order to act as wadding, with the shot (still wrapped in paper) separated from the gunpowder by this wadding.

Firing the Weapon

The remaining powder (the 0.65 g kept aside for priming) was then poured into the recess created to represent the pan found on a musket. An electric match head was positioned in the pan, ensuring it made contact with the powder. With the weapon prepared, all personnel retreated to another room. The weapon was fired by connecting the wire from the match head to a 9V battery. This caused the match head to burn, igniting the powder in the pan. The flames went through the touchhole to the powder in the chamber, which in turn ignited. The expanding gases provided the force to accelerate the shot down the barrel and towards the target.

Experiment to find Gunpowder equivalent to 18th Century Gunpowder

The aim of this experiment was to trial several modern gunpowders in order to find a composition and amount that achieved the closest match to that used in the 18th century. The intention was to obtain a muzzle velocity of 1500 fps (457.20 m/s), whilst using a quantity of gunpowder as close as possible to that used with the Brown Bess.

Results

A total of 21 firings were conducted using 3 different gunpowders. It was found that the type 3A and G12 both produced similar muzzle velocities, which were higher than that of the coarse Blasting Powder. When 3A and G12 were combined whilst keeping the same total mass, an even higher muzzle velocity was obtained. It was found that using 15 g 3A and G12 in a ratio of 1:3 achieved an average muzzle velocity of 459.4 m/s (1507.2 fps).

The results, shown in table 2, demonstrate the unpredictable and inconsistent performance of a gunpowder fired weapon, particularly noticeable with G12.

Conclusion

During the 18th century, about 10 g of gunpowder was used, achieving a muzzle velocity of around 1500 fps (457.2 m/s). As the modern powder used was not as powerful as that of the 18th century, 457.2 m/s could not be obtained using the same quantity of powder. This was expected as the modern powder was created for a different intended use. However, the most powerful effect was found by mixing 3A and G12, rather than using them

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<i>Firing No.</i>	<i>Amount of Powder (g)</i>				<i>Velocity (m/s)</i>
	<i>3A</i>	<i>G12</i>	<i>Blasting Powder</i>	<i>Total</i>	
1	10			10	314.7
2	10			10	282.2
3	10			10	204.9
4		10		10	130.2
5		10		10	329.3
6		10		10	210.7
7			10	10	138.4
8			10	10	110.7
9			10	10	186.6
10	5	5		10	305.3
11	5	5		10	271.6
12	5	5		10	295.0
13	2.25	7.75		10	336.5
14	2.25	7.75		10	310.0
15	2.25	7.75		10	291.6
16	4.5	13.5		18	448.7
17	4.5	13.5		18	476.7
18	5	15		20	513.9
19	3.75	11.25		15	447.1
20	3.75	11.25		15	473.8
21	3.75	11.25		15	457.2

Table 2. Varying Gunpowder Type and Quantity

individually, 15 g of 3A and G12 mixture in a ratio of 1:3 gave the closest match to the desired effects, producing an average muzzle velocity 459.4 m/s (marginally above 1500 fps). This increased velocity from mixing the powders could be due to the powders having individual pressure/travel curves, which peak at different distances down the barrel. When mixed, the pressure/travel curves are combined, leading to a longer peak pressure (larger area under the graph) and therefore higher muzzle velocity.

Experiment to Synthesise hitting Targets at 75 and 150 yds

Having achieved the muzzle velocity of the 18th century, the amount of gunpowder used then was scaled down to achieve the desired terminal velocities for the future experiments. Given that the SAER range was 20 m long

and the targets positioned at the 15 m point, the ballistic modelling found that to achieve the effect of hitting a target at 150 and 75 yds, muzzle velocities of 313.0 and 379.0 m/s respectively were required. This experiment aimed to find how much powder was needed to obtain these values. Different quantities of the 1:3 mix of 3A/G12 gunpowder were fired using the replica musket, and the quantity varied until the desired muzzle velocities were achieved.

Results

Using the results from the previous experiment, the average muzzle velocity of 312.7 m/s obtained with 10 g of gunpowder was deemed close enough to the required 313.0 m/s to replicate firing at 150 yds. 14 g was found to give an average muzzle velocity of 383.9 m/s, with the results shown in Table 3. This was regarded sufficiently near to the required 379.0 m/s to replicate firing at 75 yds.

<i>Amount of powder (g)</i>	<i>Achieved muzzle velocity (m/s)</i>
14	388.0
14	365.1
14	398.7

Table 3. Replicating Firing at 75yds

Conclusion

Due to the variable nature of gunpowder in the replica musket, it was decided that obtaining the calculated muzzle velocities exactly was not necessary, and small differences were tolerable. 10 g of the 3A/G12 mixture provides a close enough muzzle velocity to that desired for the 150 yds, whilst 14 g would be used for 75 yds.

Wound Effects

Target Analysis

At the battle of Culloden, the target was a Jacobite warrior wearing a woollen garment known as a plaid, which in various forms could constitute a kilt, a shirt and or a waistcoat. The armour consisted of large shields known as targes. The targe was constructed from an irregular number of thin planks of pine glued edge to edge, which was then laid crossways over another series of similar planks, so the grain of one is set across the other. This cross ply construction made the shield stronger and much improved sword or bullet-

stopping capabilities. The front of the targe was then covered in cowhide and nailed at the back. Targes were between 18 and 24 inches in diameter, with the wood around half an inch thick. Based upon this data, and ignoring some of the decorative features, a replica was produced from pine cross ply, and covered in cow leather.

The targets used to mimic the human torso were produced from a mix of water (85% by weight) and ballistic gelatine (15% by weight). This mix has a similar density (1.06 g/cm^3) and elastic modulus to human tissue, while accounting for variances in density within a real human torso. A thick woollen blanket was cut to cover the face of each target block. This represented the likely clothing worn by Jacobite forces during the battle. In some trials, it was wetted to assess any differing effects, as claimed by some historians.

Wound Effects Experiments

Eight experimental firings were used to examine the wounding effects of the technical replica and deformation of the lead shot. The same range set up described earlier was used, with a high speed camera focused on the target end in order to capture temporary cavitation effects. The technical replica Brown Bess was mounted on the stand at the SAER, and fired using an appropriate amount of modern gunpowder to achieve the terminal velocity expected at the likely distance of engagement with the enemy.

Experiment investigating Effect on Gelatine Block at 150 yds

The first experiment was designed to simulate the effect of the musket shot hitting a man in the torso at 150 yds—the likely distance of engagement. A blanket was placed around the gelatine block to replicate clothing. An entry wound 38 mm across was inflicted, and an exit wound of 65 mm. The maximum permanent cavitation was around 40 mm. It is assessed that this level of damage to the ballistic gelatine block represents a catastrophic effect on a human torso at the likely maximum distance of engagement, assuming a strike to the torso.

Experiment investigating Close Distance Engagement (75 yds)

Next, the effects of the musket shot hitting the chest of a man at 75 yds were measured. 14 g of gunpowder was used to achieve the 379.0 m/s muzzle velocity to simulate this engagement range. The high-speed camera captured evidence of some extremely large temporary cavitation, stretching the gelatine block to twice its original height and volume. The entry wound was 48 mm across, and exit was around 55 mm. The maximum permanent cavitation was 80 mm across, and the wound track had forced off a chunk of

ballistic jelly. The temporary cavitation is much greater at 75 yds compared to 150 yds, meaning that considerably more damage would have occurred, that would almost definitely have been fatal.

Experiment to measure the Penetration of Replica 18th Century Armour (150 yds)

The third experiment was designed to measure the effectiveness of battlefield protection available at the time of the battle of Culloden. A smaller mould of ballistic gelatine was used, replicating the thickness of a human arm, which would be supporting a targe in battle. Both the targe and the ballistic gelatine were penetrated, with a clear wound track visible through the depth of the gelatine block. Small pieces of wood and woollen material were dragged into the wound track. The entry wound was 20 mm in diameter and the exit wound 25 mm. Considerable translation occurs, with both the targe and the gelatine block knocked off the target frame. Permanent cavitation in the form of small bubbles in the gelatine block could be seen, 38-40 mm in diameter.

The presence of an exit wound in the gelatine block shows that not all of the kinetic energy was transferred to the gelatine block. However, the translation of the apparatus implies that the force may be great enough to knock over a soldier holding a targe. A considerable amount of the displaced wood from the targe could be seen in the ballistic gelatine block. This would drag any dirt and pathogens into the wound, likely to cause death by secondary infection if the soldier survived the impact.

Experiment investigating Effect on Replica Armour with Steel (150 yds)

The fourth experiment was a repeat of the previous, but with a 1 mm steel plate placed in front of the targe to replicate the reinforced shield sometimes utilised. The steel plate was easily penetrated, as was the targe. This proved that the steel plate provided little additional resistance to the shot. However, the steel may have improved the targe's performance against other hand-held weapons such as axes or maces.

Experiment investigating hitting two Ballistic Gelatine Blocks with Clothing and a Pork Ribcage (150 yds)

The fifth experiment was designed to evaluate three effects. Firstly, the shot hitting bone, achieved by placing a pork ribcage between the clothing and the gelatine block; secondly, another gelatine block was placed 20 cm behind the first to see whether two Jacobite soldiers may be incapacitated by the same shot; thirdly, the second block was placed behind six layers of fabric that were saturated with water. This would investigate the theory that wet blanket may prevent penetration by the lead shot.



Fig. 3. High Speed Camera Footage Showing Temporary Cavitation

Both gelatine blocks were penetrated, and large temporary cavitation was captured on high speed camera, shown in fig 3. Significant debris from clothing and pork ribcage is visible in the wound track of the first gelatine block. There is fabric debris in the second. This proved that the same round could well incapacitate two or more (closely spaced) Jacobite soldiers. It also disproves any idea that wet clothing may protect against penetration from lead shot. It was evident that a large amount of debris gets dragged into any cavity formed by the shot, likely to lead to infection if the wound is survived.

Experiments examining the Effects on Modern ceramic body armour (CBA) (150 yds)

The next two experiments were designed to compare the Brown Bess effects on modern day battlefield protection; CBA with and without a ceramic plate. Without the ceramic plate, the shot hit the fabric lining of the CBA, perforating it. The shot was caught inside the fabric and bulged the inside lining. The shot itself became deformed, with the appearance of it having been squashed. The inside of the fabric protruded sharply around 2-3 inches into the body behind the armour. With the ceramic plate inserted, the plate was



Fig. 4. Damage to Ceramic Plate

shattered and only a slight bulge occurred to the fabric. The damage to the ceramic plate is shown in fig 4. The high speed footage appeared to show the lead shot shattering.

While the CBA stopped the shot, the behind armour effects were considerable. It is assessed that the lead shot would incapacitate a man wearing CBA without ceramic insert plate. With the plate, incapacitation was unlikely to have occurred, but the wearer would probably have been knocked over.

The Effects of Musket Balls striking Sharp Metal, such as Sword Blades (150 yds)

Previous archaeological investigations at Culloden have uncovered musket balls which appear to have been deformed, perhaps by striking a sword blade or other metallic item such as a belt buckle. The former hypothesis was drawn from musket balls which had been almost cleaved in two, leaving the two halves hinged like a scallop shell (Pollard 2005). An attempt was made to replicate this circumstance by positioning mesh wire garden fencing at the end of the range, with a 'soft capture' box containing rubber chunks behind it. The fencing used was steel with plastic coating. The horizontal and vertical strands of the fence formed 45 mm by 45 mm squares. The soft capture box was intended to decelerate and contain the lead shot.

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Unfortunately, the soft capture box failed to adequately decelerate the shots, resulting in deformation occurring on hitting the back wall of the box. It was not therefore possible to examine whether the shot had cleaved. All shots caused dislocation and bending of the strands in the fencing, or the removal of one side of a square in the fencing. This implies that metal, such as a belt buckle, would be unlikely to stop a lead shot.

Terminal effects summary

The effects demonstrated using ballistic gelatine at realistic engagement ranges have shown that if struck by a lead shot, the human body will at the very least be incapacitated, and most probably fatally injured. In this respect, the ballistic performance of this weapon system can be said to be excellent, with its effect on modern CBA showing it to be comparable to modern weapons (except enhanced penetrating ammunition). It would certainly cause attrition to advancing enemy who entered the zone where the shots were fired.

Accuracy

The experiments have not investigated the issue of accuracy of the weapon, which has obvious ramifications for the overall effectiveness. However, the technical replica used during the project did display a consistent level of performance, with entry holes on a witness screen behind the targets often overlapping, and all occurring within an area of an A4 piece of paper at a range of 20 m. Given the reports of extreme inaccuracy, this result was surprising. However, many variables that are known sources of inaccuracy were eliminated during the range sessions. The recoil of the weapon is known to be huge, and likely to be the largest cause of variability, as it would be impossible to hold the weapon still when firing. The more consistent modern gunpowder used would also have reduced the muzzle velocity variation, which in turn affects the trajectory.

Conclusion

The aim of the project was to conduct a detailed study of the effectiveness and capabilities of the 18th century Brown Bess musket. Experiments were designed and conducted which investigated the ballistic effects of the Brown Bess, and answered the questions posed at the start of the project. A replica musket was created, which was able to fire replica cartridges with accurate recordings made. Having researched the historical accounts, key claims of the Brown Bess's capabilities were chosen for investigation. Experiments were then

designed to assess their legitimacy. In all cases, meaningful results were obtained, which could be related back to the historical evidence.

Gunpowder

Gunpowder in the 18th century was made using a lengthy procedure which contravenes modern health and safety regulations. The modern gunpowders that were sourced to fire the weapon were not as powerful per unit mass to the 18th century gunpowder in terms of muzzle velocity achieved. 15 g of modern powder was required to achieve the same velocity as 10 g of the old powder. This could be attributed to the modern powder not being designed to fire a musket, and so having different specifications.

Cartridges

Replica cartridges were successfully constructed following the 18th century method, using paper and lead shot that were a close match to the original.

Modelling

The computer modelling proved invaluable when calculating how to scale down the powder to achieve the correct muzzle velocities for the terminal effects. The models also provided information about the range of the weapon, which could not be performed experimentally. The maximum calculated range was around 1,200 m when firing at 35° of elevation, and 202 m when firing horizontally.

Wound Effects

All but one of the experiments examining terminal effects used a muzzle velocity equating to being hit at 150 yds (137 m). The damage caused to the target indicates that immediate death would be almost certain due to the large temporary and permanent cavitation. This confirms the effectiveness of the weapon at relatively long range, contradicting the historical accounts of it being ineffective at 100 yds (91 m). At 75 yds (69 m), the effects were even more damaging, causing much greater cavitation. It was also proved that a single shot could penetrate more than two soldiers, and would shatter bone, dragging fragments throughout the wound. The outer clothing layer was also dragged through the wound, along with any dirt and pathogens. If the soldier survived the impact, death would still be likely through secondary infection. The damage caused to the modern CBA again shows the harm that the shot could cause against today's armour.

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EXHIBIT 2

**Colonial Era Firearm Bullet Performance: A Live Fire Experimental Study
for Archaeological Interpretation©**



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With contributions by Daniel M. Sivilich and Daniel T. Elliott

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Introduction

Firearms were a central feature of combat for the past millennium and a significant vector of political, ecological, and cultural change. Guns entered the New World as a rather refined technology that became a causal factor in Post-Columbian developments. Guns, gunpowder, and projectiles affected interethnic, colonial, and political relations and were a major point of commerce and trade. They also deeply impacted the ecology of the New World. To address these kinds of issues, archaeologists need analytical tools to understand why gun parts failed, what types of firearms fired discovered projectiles, and the meaning of projectile distribution found on archaeological sites created by Colonists, American soldiers, traders and hunters, and Native Americans. A systematic archaeological study of guns is, however, only beginning.

In recent years, battlefield and conflict studies have emerged as a significant focus of archaeology internationally. This present study intends to enhance archaeological research on these topics by using multidisciplinary experimentation to reveal residue patterns associated with pre-modern gun use. Attempts to interpret the battlefield evidence indicate the need for specialist expertise to explain the origins of firepower. This information is scattered across various disciplines, with respective researchers not adequately sharing information with one another. Forensic scientists, firearm examiners, and engineers have developed techniques for the study of firearms, but these are rarely addressed by archaeologists.

Experimental archaeology has emerged as a rigorous approach to the study of material reflections of human behavior. This is an increasingly refined field that lets archaeologists develop insights and methods for making behavioral interpretations of things in the archaeological record. To study firearms, archaeologists need to design and carry out appropriate experiments and draw on technical methods developed by firearm examiners, engineers, and physicists. Recent battlefield archaeological investigations have given new impetus to identifying the rifling characteristics of historic rifled firearms, the external ballistic capability of such firearms, and the combat efficiency of such arms. The goal of this study was to collect information on the ballistic capability of late eighteenth smoothbore firearms.

With some modern exceptions (see External Ballistics section), there have been few controlled studies of flintlock and percussion ignition system small arms combat efficiency. Neither have there been external ballistics studies since a British experiment in 1840 (Hughes 1983; 1969; 1974). This study is a byproduct and outgrowth of conversations and personal interest associated with the recovery of fired and dropped Colonial and British musket balls from the Parker's Revenge site, a part of the April 19, 1775 battles that began the Revolutionary War in earnest. The Parker's Revenge project at Minute Man National Historical Park directed by Margaret Watters Wilkes (2016) was responsible for bringing the team together that eventually conducted the live fire research effort.

The results of this live fire experiment with Colonial and Revolutionary War firearms is a beginning for the investigation of late pre-modern gun use. To determine what happens when large-caliber lead balls were used in combat or hunting we observed impacts of experimentally fired balls into ballistic gelatin, an accepted tissue simulant with end coverings to simulate

clothing of the era, and into a sand backstop. We also used a wooden palisade made up of dry loblolly pine, green loblolly pine, live oak, and maple palings to obtain bullet impact information. Projectile deformation associated with varied ranges were catalogued. The results of these experiments will permit archaeologists to better interpret recovered projectiles.

The study goals were to collect data and conduct live fire experiments with high-quality faithful reproductions of typical and common Colonial and Revolutionary War weapons. The study activities were designed to benefit several audiences:

- 1) those interested in the history of firearms;
- 2) re-enactors who will use the information in creating more authentic presentations;
- 3) professional historians, archaeologists, and interpreters who either deal with firearms or how firearms were used; and
- 4) firearm examiners who can use the information to exclude historic bullets and cartridges that are sometimes found on crime scenes from consideration and/or correctly assess black powder and reproduction firearms that are sometimes used in shooting incidents today.

The live fire experiments were designed to capture information of flintlock firearm performance and capabilities that will benefit the goal audiences in their understanding and interpretation of archaeologically recovered spherical lead balls. To achieve these objectives, we designed the experiments to collect data on:

- 1) the velocity, range, and ballistic performance of common spherical lead balls of the type used in the Colonial era.
- 2) factors that could cause variation in ball impact, and
- 3) how deformation of lead balls can be linked to velocity, impact range, and target media.

This report is well illustrated for the simple purpose of providing the reader with illustrations of weapon types, bullets, bullet deformation, etc. The extensive use of figures is, we believe, important to visualize and make clear the complex elements of firearms external and terminal ballistics that would result in a far wordier presentation otherwise.

Components of the Live Fire Experiment

The live fire experiment used common types of French and Indian War and Revolutionary War flintlock firearms. Other components of the experiment included the firing range, consideration of the black gunpowder used as a propellant, standardization of the lead balls, the construction of authentic style cartridges, and the methods of data collection.

Firearms Used in the Experiment

Seven flintlock shoulder fired firearms were used in the live fire experiment. The seven are a reasonable representation of guns commonly used in the French and Indian Wars and the Revolutionary War. They are all custom-made replicas of actual Revolutionary War flintlock firearms. One Colonial fowler, a copy of the .580-caliber Thomas Earle Fowler represents the type of weapon used by Colonial militias and minute man companies. Two British Long Land Pattern Brown Bess guns, the 1742 pattern and 1756 pattern in .76-caliber, represent the standard British infantry firearm used in the French and Indian War as well as the American Revolution. Another common British gun of the era is the Artillery Carbine in .65-caliber, which also represents the British Officers Fusil and the British Sergeants Carbine. Two French patterns, 1728/41 and 1763/66 were also fired. The pattern 1728/41 has a slightly oval bore, as does the original from which it was copied. The bore in .70-.71-caliber. The French 1728/41 musket was also used in the French and Indian Wars as well as by Revolutionary War militia companies and militiamen. The pattern 1763/66 has a .68-caliber bore. The seventh gun was a replica 1740 Potsdam musket, .73-caliber, of the type often carried by Hessian units recruited by the British.

The experimental firing was conducted over a three-day period, November 14-16, 2016 near La Grange, Georgia.

Firing Range

For this study a 100-yard range was constructed to contain or concentrate the fired projectiles in a safe and manageable way. At 100 yards a 7.5-foot high palisade wall was constructed from freshly cut oak and pine logs. Directly in front of the palisade wall a sand backstop 5.5-foot high by 10-foot wide was mechanically piled using fine clean sands. These media were chosen to replicate soil impacts and wood impacts of various types to add to the data of the study. In addition to the palisade and sand backstop a shooting bench was constructed to provide a stable base for consistent shooting. While demonstrating accuracy was not the goal of the live fire experiment, the bench and target provided a stable aiming point for all shots.

The range was established with safety as the priority. A large hill provided a natural backstop at 200 yards and a safe zone extended another 1500 yards. The range, located on private lands with limited access, thereby provided access control for personal and equipment.



Figure 1. The firearms used in the live fire experiment. Top to bottom, British Artillery Carbine, British 1742 Long Land Pattern musket, British 1756 Long Land Pattern musket, French 1728/41 musket, French 1763/66 musket, Thomas Earle fowler, and a Potsdam 1740 musket.

One team member was designated as range safety officer, with all other shooting team participants also remaining vigilant. Prior to all firing the safety officer, William Rose, announced ready and proclaimed the range hot. After firing the weapon was cleared and a recovery team proceeded down range to recover the projectile. When a hangfire or flash in the pan occurred, the weapon was held in place for a count of 30 seconds, the pan cleaned and re-primed, then an attempt to fire the weapon again. The range was declared clear only when the weapon was successfully discharged.

The palisade wall was constructed to provide additional data on impacts of projectiles on selected wood species. The trees selected; live oak (*Quercus virginiana*), loblolly pine (*Pinus taeda*), and red maple (*Acer rubrum*) were all about four-inches in diameter. Each is a common species found along the east coast, which allowed for a reasonably accurate recreation of a Colonial block house palisade wall. Constructed with two 25-foot long 6-inch truss supports screwed in place with 10-inch screws, the log palings were placed between two living oaks that were 20-feet apart. These acted as addition supports for the palisade line. Each 4-inch post was placed in a 12-inch deep post hole and backfilled after wood post placed. After placement, baling wire was utilized as lashing to secure the post in place. After all posts were in place they were trimmed to the same length. It was not the intention for the palisade to act as a backstop but rather to add data on bullet impact and deformation. Because of the chance of projectiles passing though the gaps or wood post, a tarpaulin was placed on the backside of the palisade to track projectile trajectory.



Figure 2. The area of the firing range. The blue line is safety zone, black line is the 100-yard range, and the yellow line delineates the western property boundary along a stream.



Figure 3. Patrick Severts seated at the shooting bench and taking aim at the 100-yard range.

The sand backstop in front of the palisade wall not only provided a backstop for projectiles but also offered soil impact data. For this, clean loose sands were chosen to minimize escapement or deflection. After each firing a metal detector sweep of the backstop was conducted to expedite the locating of the fired projectile and to keep the sand free of potential hazards. Just to the front of the sand backstop a target stand with a silhouette target provided a defined aiming point. The

target frame was constructed of 4x4 inch treated pine lumber with a sheet of fiberboard as a target backing. A man-sized head and torso standard paper silhouette target was affixed to the fiberboard.



Figure 5. Charles Haecker and Corinne Rose standing on either side of the target frame. Note the sand backstop behind the target and the palisade wall behind the backstop. The stake in front of the target is at 94 yards from the shooting bench, with the palisade at 100 yards from the bench location.

Black Gunpowder Propellant

In this study, we used Swiss FFg black gunpowder as the priming and propellant charge in all weapons. Only the charge weight was varied among the guns fired and for purposes of achieving lower velocities for shooting into tissue simulant. Dodd (2006:31) defines black powder as:

“Black powder, by its very nature, is a true explosive. The smallest of sparks is sufficient to effect ignition. On ignition, a large quantity of bluish-grey smoke is generated and a characteristic sulfurous residue is deposited on both the weapon and the shooting hand. The Chinese are credited with its discovery and the discovery of the explosive properties of the mixture of substances we know as traditional gun powder — sulfur, charcoal, and saltpeter (potassium nitrate). It is suggested that gun powder may have been used in the manufacture of fireworks well before its application to firearms and warfare. Only the manufacturing process has been refined over time.”

The origin of black gunpowder is still debated in academic circles, but it is largely agreed to have originated in China in the eleventh century and spread to Europe by the late thirteenth or early

fourteenth centuries (Buchanan 1996). The first black powder was hand mixed and is referred to as serpentine powder (Hall 1996:87-88). The black gunpowder used in this study is much more refined and is referred to as corned gunpowder. Corning, the wetting of the dry mixture, stamping, and glazing, as well as other manufacturing processes, began in the mid-1400s and largely supplanted serpentine powders by about 1550. The corning process was refined over time, but for all practical purposes corned black gunpowder was the only type used in the New World after the mid-1500s (Hall 1996; Tascón et al. 1996; Howard 1996). The Swiss® brand corned black gunpowder used in our experiments is considered to be among the best at producing reliable and replicable results in comparisons with other black gun powders and black powder substitutes manufactured today for sporting purposes (Haag 2001; 2012).

Historically, the amount of black gunpowder used in various weapons in the eighteenth and early nineteenth centuries varied substantially. One source (Force 1846:667-68). list powder charges for muskets as:

"In Committee of Safety, May 29, 1776...The Committee appointed to consider of a proper mode of providing Cartridges for the different bores of Fire-Locks in the hands of the Associators report, that the practice of our Commissary, upon the authority of Books, is, two-fifths of the weight of each Ball to a charge of Powder, which proportion has been ascertained by actual experiment, as lately reported by a Committee appointed out of the Battalions in this City, as published in the publick prints, adopted by this Board and entered on our Minutes."

The Committee of Safety then listed several bore sizes in gauge or balls to the pound with their respective pennyweight and grain weight powder charges. The list, with a conversion to standard caliber measurements and powder charge by grains is:

Balls to the pound	Caliber in inch	Powder charge in grains
13	.777	236
15	.695	204
17	.665	180
19	.637	160
21	.618	146
24	.588	128
30	.533	102

Ayde (1800:60) lists a series of gunpowder charges for common European muskets of the late eighteenth century, but does not list the calibers, although they were all in the .69 -.75-caliber range for known muskets of the time.

English - 7 Drams = 192.5 grains

Hessian 6 Drams = 165 grains

Austrian -5 Drams = 137.5 grains

Dutch - 4 Drams = 110 grains

French - 3 Drams = 82.5 grains

Another source (de Marolles and Cleator 1789:200-201) suggests: "Some determine the charge of a fowling piece, by the weight of the ball of the exact size of the caliber; estimating the weight of the powder at one-third of that of the ball, whether it is proposed to shoot with ball or with shot,..."

Spearman (1828) in his British Gunner treatise states the following charges were standard since 1775:

Musket:

Proof charge: 23.334 drams (642 grains)

Service charge: 6 drams (165 grains)

Exercise charge (for blanks): 5 drams (138 grains)

Carbine (Rifle Bore)

Proof charge: 15 drams (413 grains)

Service charge: 4 drams (110 grains)

Exercise charge: 4 drams (110 grains)

Carbine (Musket Bore)

Service charge: 5.5 drams (151 grains)

Exercise charge: 4.5 drams (124 grains)

Spearman also stated: "The service charges given in this table, although established by authority, are too great, and might be reduced by about one-fourth. They have not been altered since 1775, while the strength of the powder has been increased in nearly a two-fold ratio since that period."

Klatt (1999) reported on two surviving Revolutionary War era cartridge packets, containing buck and ball loads. Both packets are dated 1777 and had powder charges of around 115 grains (7.45 grams). This charge is consistent with Spearman's observation of reducing the approved British powder charge by one-fourth to account for the availability of better quality gun powders.

The range of black powder charge sizes for any given caliber is varied as these and other sources cited later demonstrate. We choose to use a 110-grain black powder charge in .69-caliber to .75-caliber guns including the priming charge as it most closely approximates the Spearman recommendation and is consistent with the known charges in surviving Revolutionary War cartridges. For smaller caliber firearms we choose to use an 85-grain powder charge including the priming charge. We also used reduced charges to lower the muzzle velocity when firing at ballistic gelatin in order to capture the bullet in the gelatin. Powder measures showed only 0.1-gram variation in weight among any given charge size.

Lead Spherical Balls Used in the Experiment

Information on the diameter and weight of Revolutionary War musket and fowler balls comes largely from the archaeological record. There are few surviving Revolutionary War spherical balls from non-archaeological contexts that are available or have been studied. Klatt (1999) reported on two surviving Revolutionary War era cartridge packets, all of which are buck and ball loads. Both packets are dated 1777 and contain 10 buck and ball cartridges each. One packet was still sealed, but the second was open. The cartridges in the open packet were removed and examined. The bullet caliber is noted as only .69-caliber (17.5mm), although it appears no formal measurements were taken. The buckshot is reported to be .32-caliber (8.1mm). The average weight of the balls is reported to be 490 grains (31.75 grams), for the buckshot 150 grains (9.72 grams), and the powder charge 115 grains (7.45 grams).

Thomas (1997:106-108) illustrates and provides measured diameters and weights for fifteen pre-Civil War .69-caliber (17.5mm) spherical balls. The balls vary 0.640 (16.2mm) to .0715 inch (18.1mm) in diameter and vary in weight from 423 to 700 grains (27.5 to 45.3 grams). Thomas' observations are based on source material from a variety of origins, but the ranges in weight and diameter are far greater than the bullets used for this study. The same is also true for the range of variation in the Brown Bess caliber bullets reported from several French and Indian War sites as well as Revolutionary War sites (Thomas 1997:105) with a range in diameter of 0.625 inch (15.9mm) to 0.695 inch (17.7mm) and a weight range of 343 to 472 grains (22.2 to 30.65 grams).

Wilkes (2016:315) provides weights and diameters on fifteen British and nine Colonial fowler balls that were fired on the first day of the American Revolution, April 19, 1775, at the Parker's Revenge site in Minute Man National Historical Park. The British spherical range in weight from 364.2 to 483 grains (23.6 to 31.3 grams) and the calculated diameters range between 0.639 to 0.702 inch (16.23 to 17.8mm). The Colonial fowler spherical balls ranged in weight from 126.5 to 381.1 grains (8.2 to 24.7 grams) and in diameter from 0.449 to 0.649 inch (11.4 to 16.5mm). Similar findings are reported by Sivilich (2016) in his spherical ball study and by Harding (2012) in his study of lead shot from the seventeenth century English Civil War.

One of the earliest known studies of bullet performance and penetrations was conducted by a U.S. medical officer on behalf of the U.S. Army Ordnance Department in the early 1900s. La Garde (1991:36) in his pre-World War I study of gunshot injuries compiled a table of 'early' small arms ammunition, which included the pre-1851 round ball. He reported the round ball to have ranged in diameter from 0.7559 inch to 0.6929 inch in diameter and with a weight range of

484 to 584 grains. He also noted the initial muzzle velocity of these early balls to range from 590 to 754 feet per second. La Garde does not provide a source for his data, and it seems in part inaccurate, but it likely reflects the loss of accurate information on bullet diameter and weight for spherical balls that occurred after the mid-nineteenth century shift to conical or cylindro-conical bullets.

Dr. Lawrence Babits conducted a series of live fire experiments to determine the accuracy of buck and ball loads at different ranges. He conducted the experiments over several years with French and U.S. regulation muskets (Babits 2002). His report used documentary sources and compared them to his live fire experiments. He found that the ball was reasonably accurate out to 100 yards, but the buckshot rarely hit the target at that range. Buckshot would hit an intended target at 25 to 30 yards, but beyond that range it was largely a matter of coincidence if a buckshot hit its intended target.

The spherical balls used in the live fire experiment are commercially cast soft lead bullets (see Appendix C for pXRF trace element information). The experimental spherical ball weights show a minimum of 1.5 grain (0.1-gram) to a maximum of 4.6 grain (0.3-gram) weight variation in the 20% sample weighed. The measured ball diameter also showed very little variation, being about 0.001 to 0.003 inch among all the balls measured. They have far less variation in weight and diameter than any of the published historical ball diameters or archaeological specimens reported. The balls are less than bore size, except for the .580 ball which is bore size for the Thomas Earle fowler. Typically, balls were less than bore sized to allow ease of loading, especially after multiple rounds were fired which caused black powder fouling in the bore. The common term for this is windage.



Figure 6. Unfired cast lead balls used in the experimental firing. L to R, .315 buckshot, .282 buckshot, .520 ball, .580 ball, .626 ball, .663 ball, and .69 ball.

Cartridges and Cartridge Paper

Prior to the live fire experiments Corinne and William Rose rolled a series of cartridges in each of the calibers to be used following eighteenth century guides on cartridge construction. Proper weight laid paper in a trapezoid shape was rolled around a wood former. A ball or a ball and

three buckshot were placed in one end, the top twisted closed and the former removed. The appropriate powder charge for the caliber was then poured into the other end of the cartridge, twisted closed and the excess laid paper folded over to form a tail. Linen twine was then wetted and tied below the ball or ball and buck to hold the bullet in place. Finally, a ball point pen was used to mark the completed cartridge with the type and ball diameter.



Figure 7. Laid cartridge paper cut to standard form and ready for rolling cartridges.



Figure 8. Corinne and William Rose rolling cartridges in preparation for the experimental firing.



Figure 9. Completed cartridges with notes on the laid paper body denoting ball size and intended firearm.

Live Fire Experiment Methods

The live fire experiments were conducted on November 14-16, 2016. Each firearm was loaded for the experimental firings by a single individual. Each firearm was fired in either a 10 shot or 5 shot string by the same individual. Shooters were changed for each gun. The guns were fired from a bench rest, not to achieve accuracy for each shot, but to enable the use of high speed videography to capture the ball as it emerged from the muzzle as well as record initial muzzle velocity.

Nathan Boor of Aimed Research® provided and operated a Phantom V611® high speed camera that was calibrated for each shot string. The camera recorded imagery at approximately 6,900 frames per second in Raw format. For each shot string, the gun was placed on the bench, the height from muzzle to ground surface was recorded. Each shot had the ball diameter and weight noted. Also recorded were the weight of the propellant charge, the calculated muzzle velocity, temperature, wind speed, and humidity. Barometric pressure was obtained from the local weather service daily records.



Figure 10. High speed camera setup in progress with personnel measuring muzzle height above ground surface and preparing to calibrate the camera.

A LabRadar® unit, which is a Doppler radar tracking device, was set up to acquire initial muzzle velocity data. The unit was unable to acquire any data due to the amount of gas, flame, and smoke emanating from the muzzles of the flintlock muskets. The radar unit was moved down range in several increments until it reach nearly 20 feet from the muzzle. It was unable to acquire any data and was then retired from the project.



Figure 11. LabRadar® Doppler radar unit. Due to the extensive downrange gas and smoke flare from firing the unit was not capable of acquiring downrange velocity data and was withdrawn from service.

Most shots were fired at a range of 94 yards using a man-sized head and torso silhouette target mounted on a 4x4 treated pine frame. Buck and ball loads were fired at ranges of 25 and 30 yards with the target frame moved to each of those distances from the firing bench. On November 16 shooting was confined to firing three guns at blocks of Clear Ballistic® gelatin as well as some offhand shooting done to record the flintlock function and the nature of the recoil.

After each shot was fired two to three team members moved down range with metal detectors to search for and recover the fired ball. Metal detectors employed included a Minelab CTX 3030®, a Minelab E TRAC®, and a Fisher F75®. Recovered bullets were bagged separately and labeled with the gun type, shot number, ball diameter, muzzle velocity, date, and any other relevant information.

The Thomas Earle Fowler, .58-caliber, was fired on each of the three days of shooting. No brushing or cleaning between shots was done on the first day. Twelve shots were fired with one misfire on shot eleven on the first day. The load was 85 grains of 2F Swiss Black powder with a .520 ball rolled in cartridge paper. Five shots were fired on the second day using 85 grains of powder and an unpatched .580 ball. No misfires occurred. On the third day four shots were fired using the unpatched .580 ball. Two shots were fired with 85 grains of powder and two with 75 grains of powder. No misfires occurred. The fowler was later fired, after resting several hours, using six buckshot. Two misfires occurred and the flint was replaced. A total of 23 shots were fired from the fowler with one misfire on the eleventh shot, and two misfires after 19 shots when the flint was replaced and two additional shots were made with no misfires. The fowler was cleaned each evening.



Figure 12. Man-sized torso paper target and target frame used as an aiming device during the firing. Hits were patched with duct tape and the shot noted. The uncovered holes in the target show a buckshot and ball hit from a buck and ball load.



Figure 13. Metal detecting underway to recover a ball after a shot at the 94 yard range.



Figure 14. British and French gunflints used in the experimental firing. The top left is a British unused flint and the top right flint is fully expended. The bottom flint is a French style unused flint.

The *British Artillery Carbine* was fired ten times on the first day with three misfires occurring, two on shot 7 and one on shot 9. The bore was dry brushed for safety after each shot, but not thoroughly cleaned until completion of the day's shooting.

The *British 1742 Long Land Pattern musket* was fired five times on the second day with two misfires on shots 1 and 5. The bore was dry brushed for safety after each shot, but not thoroughly cleaned until completion of the day's shooting.

The *British 1756 Long Land Pattern musket* failed to fire and after four misfires was withdrawn from use until the touchhole was cleaned using a vent pick and the loaded charge could be safely fired. The gun was not properly cleaned after its last use and carbon fouling at the breech prevented the powder charge from reaching the touchhole. Work with a vent pick helped clear the hole and fouling to the point where sufficient powder grains worked into the chamber via the touchhole allowed the gun to be safely discharged. The gun was given a thorough cleaning that evening. The 1756 Long Land Pattern was fired twelve times on the third day. Ten shots were fired at the Clear Ballistic® gelatin and two additional live fire shots were made in the offhand position to film details of the working of the flintlock mechanism and observed the full firing sequence as well as recoil. The bore was dry brushed for safety after each shot, but not thoroughly cleaned until completion of the day's shooting.

The *French 1763/66* was fired fifteen times on the second day with buckshot and ball loads. The range was decreased to 25 yards for the first 10 shots. Shot 1 had a spread of 12 inches for the buckshot and ball. Shot 2 had a spread of 8 and 9 inches from the ball to the two buckshot that struck the target and target frame post. Shot 3 had a spread of 9 and 15 inches. Shot 4 had a spread of 8 and 9 inches with one buckshot nicking the target frame post. Shot 5 had a spread of 9 and 15 inches.

Shot 6 did not strike the target. Shot 7 had a 9-inch spread between the ball and one buckshot. Shot 8 had only a single buckshot hitting the target. Shot 9 did not strike the target. Shot 10 had a 6-inch spread between the ball and a buckshot.

The target was moved back to 30 yards and five more shots were fired with buckshot and ball using three different shooters. Shot 1 had no hits, but the ball and one buckshot were recovered at 100 yards in the soil backstop. Shot 2 had a spread of 9 inches between the ball and a single buckshot. Shot 3 had only a single buckshot hit the target, but the ball and a buckshot were recovered from the backstop at 100 yards. Shot 4 did not strike the target. Shot 5 had a 5-inch spread between the ball and one buckshot. The bore was dry brushed for safety after each shot, but not thoroughly cleaned until completion of the day's shooting.



Figure 15. A buck and ball load hit on the paper target at 25 yards fired from the *French 1763/66* musket. The ball struck the center mass with the three buckshot striking, two at the lower 9 ring and one lower and left in the 8 ring.

The *French M1728/41* musket was fired five times on the first day with three misfires occurring on shots three and four. The bore was dry brushed for safety after each shot, but not thoroughly cleaned until completion of the day's shooting.

The *1740 Potsdam musket* was fired five times on the second day with one misfire occurring on the fourth shot. The bore was dry brushed for safety after each shot, but not thoroughly cleaned until completion of the day's shooting.



Figure 16. Charles Haecker firing the 1740 Postdam musket. The musket misfired with only a flash in the pan.

The live fire experiment resulted in the firing of 74 spherical balls and 63 buckshot. The breakdown for each caliber fired by number of shots fired with recoveries noted, and total number of balls recovered per caliber.

12 - .520 balls were fired – 6 known shot sequence recoveries – 2 unknown attribution – total 8=75%

19 - .580 balls were fired – 9 known shot sequence recoveries – 1 unknown attribution – total 10=52%

23 - .626 balls were fired – 10 known shot sequence recoveries – 9 with unknown attributions – total 19=82%

20 - .69 balls were fired – 5 known shot sequence recoveries - 6 unknown attribution – total 11=55%

63 .282 and .315 buckshot were fired in 18 separate shots – 2 known shot sequence recoveries - 8 with unknown attribution- total 10=16%

Total ball and buck fired 137 - Total known recoveries 32=23% Total unknown recoveries 26=19%. Total recovered 58=42.3%

Principles of Firearms Exterior Ballistics; Background to the Study

Exterior ballistics is the study of the performance of a bullet after it leaves the gun. As Lucien Haag (2006:214-215) observes there is a difference in what a ballisticians and a forensic scientist, or for our purposes an archaeologist, is seeking in studying bullet performance. The forensic scientist or conflict archaeologist is seeking to reconstruct a shooting incident or event based on residual physical evidence, the artifact, and knowledge of one or more types of firearm ammunitions' ballistic properties and performance.

Essentially all firearms send a projectile toward a target in a like manner (Garrison 1993; Hueske 2006). The target is determined to be at a certain range, and there is a line of sight between the shooter and the target. When the bullet is fired from the firearm it has a line of departure, a bullet flight path, and an angle of fall which are effected by various physical forces, initial velocity, gravity, air resistance, wind direction, elevation, temperature, barometric pressure, and relative humidity. Each of these factors can be accounted for in one or more ballistic formulae that are used to calculate, with reasonable accuracy, how far the bullet will go before reaching a terminal velocity and return to earth. Likewise, formulae exist to calculate how much energy as foot pounds or joules, or kinetic energy a bullet will have at various ranges (Warlow 2005:130-134). These data become important to understanding bullets' ability to incapacitate or kill, or what may happen to a bullet that is an under or overshoot. Knowing this basic information allows the archaeologist to understand better the pattern of bullet deformation observed on a battle site, the patterns in which bullets are found, and better interpret an artifact assemblage.

External ballistics for post-1900 firearms and bullets are relatively well known and is the continuing subject of analysis as new smokeless gun powders and conical bullets are developed. Datasets on external ballistics and bullet performance are limited for the soft lead spherical balls and cylindro-concoidal bullets of the preceding centuries, especially the spherical lead ball. A great deal of lore and apocryphal information exists on the ranges and performance of these historical bullets. There are good summaries of test shooting, largely at pine boards and thick catalogs or telephone books (Mattoo 1969; Cayton 1984; Fadala 1988; Osborne 1777a, b; Herring 1971; 1972a, b, c), to determine bullet penetration at various ranges that were conducted in the nineteenth century and well into the twentieth century. These data are of limited value to the modern researcher. Thus, it becomes necessary to conduct first hand live fire research with a

variety of weapons under controlled experimental conditions to ascertain the behavior of spherical bullets and other projectiles that will enhance our understanding of lead bullet behavior of the pre-1900 era.

The background for several twentieth century studies of pre-nineteenth century bullet performance are summarized for comparative purposes. A somewhat anecdotal study of a live fire experiment using a circa 1600 German made combination matchlock and wheellock .75-caliber (19mm) musket was done in the early 1950s (Grancsay 1954). The experiment used a 430-grain (27.9 grams) lead ball with 80 grains (5.1 grams) of black powder which is approximately one-fifth the weight of the ball as prescribed in historical narratives. The experimenters fired the weapon at 10 feet (ca. 3 meters) at several pieces of original armor plate. A thin mild steel Italian shoulder defense plate dating to about 1575 was easily penetrated by the bullet. Another experiment employed a German, circa 1620, buttock defense armor. The ball struck the armor near the top edge and the metal was shot away, while an experimental firing against an early 1600s German heavy armor backplate resulted in only a slight dent to the armor. The author noted the ball literally disintegrated on impact with the heavy armor.

Late twentieth century well-controlled live fire experiments with historic and reproduction firearms are limited. One such live fire study is reported by Krenn et al. (1995) employing original matchlock, wheellock, and flintlock muskets and pistols held in the provincial arsenal at Graz, Austria. The test involved fourteen firearms dating from 1571 to about 1800. The experiment used modern rifle grade black powder with the powder charge calculated to be one-third the weight of the lead ball used in the specific weapon. The calibers range from 0.539 inch (13.7mm) to 0.811 inch (20.6mm). The bullet diameters and weights allowed for windage, but apparently, bullets were specifically cast for each barrel diameter, ranging from 0.531 inch (13.5mm) to 0.795 inch (20.2mm) for diameter and 147.5 grains (9.56 grams) to 758.3 grains (49.14 grams) in weight.

The powder charges ranged from 77 grains (5 grams) to 309 grains (20 grams) of black gunpowder. For safety reasons the guns were fired electrically thus no loss of pressure occurred through the touchhole. The authors do not report if the gunpowder charges were reduced by 10 to 15 grains to account for priming in the pan. Every bullet fired achieved supersonic speeds ranging from 1263 f/s (385 m/s) to 1748 f/s (533 m/s) suggesting they used a full charge without consideration of reducing the main charge to account for priming. This coupled with the loss of pressure at the touchhole due to the electrical firing likely artificially inflated the recorded muzzle velocities.

Krenn et al. (1995) do not report recovering or examining any bullets except those fired at a modern steel plate and historic mild steel breastplate armor as well as test fires into ballistic soap (10%). The study concluded that while the bullets had lethal capacity the arms themselves were largely inaccurate at ranges above 25 meters.

In 1998 the Royal Armouries in Leeds conducted a live fire test of a fifteenth century matchlock musket and a hand of the same century for the filming of a documentary (Richardson 1999:50-52). The description of the experiments is very limited with no information presented on the type of gunpowder used, how the weapons were fired, if the priming amount was subtracted and a

host of other details. The hand gun was fired with a 50-grain (3.24 grams) black powder charge of unspecified size and a 0.615-inch (15.6mm) diameter lead ball with an average muzzle velocity of 590.7 f/s (180.05 m/s). The matchlock or arquebus was fired with 50 grain (3.24 grams), 65 grain (4.2 grams), and 90 grain (5.83 grams) black powder charges of unspecified size. These resulted in an average muzzle velocity of 1242.3 f/s (378.65 m/s), 1443.7 f/s (440.05 m/s), and 1706.4 f/s (520.10 m/s) respectively. Penetration tests were conducted against 2mm, 4mm, and 6mm thick mild steel plates with the arquebus. The arquebus bullets pierced the 2 and 4mm plates but just failed to penetrate the 6mm mild steel plate.

A well-controlled experiment using a modern 0.75-caliber (19mm) diameter barrel to replicate the caliber of an eighteenth-century Brown Bess musket was conducted by Roberts et al. (2008). They (Roberts et al. 2008:4) summarize eighteenth and nineteenth century experiments that suggest the Brown Bess achieved muzzle velocities of 1500 f/s (457.2 m/s) on a regular basis. They did note that gunpowder of the era could be variable in quality and the resulting burn rates and gas pressures were likely to result in muzzle velocities different from the ideal.

Roberts et al. (2008:7-10) fired the barrel using an electrical matchhead placed in the flash pan. They used a replica rolled paper cartridge with various powder charges ranging from 116 grains (7.5 grams), 154 grains (10 grams), and 231 grains (15 grams) and a 0.691-caliber (17.4mm) lead ball. The experiment's purpose was to reach a muzzle velocity of 1500 f/s (457.2 m/s). The gun powders used were a 3A fine which is a military designation for special purpose black gunpowder and is roughly the equivalent of the U.S. FFFg black gunpowder, G12 which is roughly equivalent to U.S. Fg gunpowder, and coarse blasting powder. Each has a different burn rate resulting in different internal pressures.

The loading and firing process did account for priming the pan. They deducted 10 grains (0.65 grams) from each charge to control for priming. The experiment fired 21 shots using the three different gunpowder granulations. The firings resulted in a range of velocities based on powder charges of 427 f/s (130.2 m/s) to 1685 f/s (513.9 m/s). The range of velocities achieved using a 154 grain (10 gram) powder charge is of more direct interest and value to our experiment as it is the closest to the standard 110 grain charge used by the British during the American Revolution. The 3A fine gunpowder 154 grain charge resulted in firings producing 1032.5 f/s (314.7 m/s), 925.8 f/s (282.2 m/s), and 672.2 f/s (204.9 m/s). The G12 gunpowder charge of 154 grains resulted in muzzle velocities of 427.16 f/s (130.2 m/s), 691.3 f/s (210.7 m/s), and 1080.4 f/s (329.3 m/s). The Blasting grade powder at a 154-grain charge achieved muzzle velocities of 363.2 f/s (110.7 m/s), 454 f/s (138.4 m/s), and 612.2 f/s (186.6 m/s).

Roberts et al. (2008:20) concluded that at 1500 f/s (457.2 m/s) a bullet fired at an elevation of 35 degrees would travel 3937 feet (1200 meters) or if fired horizontally would travel 663 feet (202 meters). Their work also included calculating wound effects using ballistic gelatin and penetration studies of replica eighteenth century armor. They found the 1500 f/s bullet penetrated the armor and simulated human arm tissue and bone at 150 yards (137 meters). They observed that a shot would drag fragments of clothing into the wound as well as shatter human bone. They concluded that the Brown Bess ball would most certainly have significant wounding and lethal

effect at traditional combat ranges of 100 yards (91 meters) and 75 yards (69 meters) if it was traveling at 1500 f/s (457.2 m/s).

More recent controlled replica Brown Bess experimental firings were done by Lucien Haag (personal communication March 28, 2015). In these tests, Haag used a .72-caliber (18.29mm) Brown Bess with a 0.718-inch (18.23mm) diameter lead ball with a cotton patch. He used 100 grains (6.4 grams) of Goex FFG black powder. The firings resulted in a muzzle velocity of 951 f/s with 1108.3 ft-lbs (337.8m) of energy at the muzzle. At 200 yards (183m) the muzzle velocity dropped to 668.4 f/s (203.7m) and the energy to 547.6 ft-lbs (167m). The bullet is calculated to have dropped 100.55 inches (2.55m) over 200 yards (183m). The highest muzzle velocity reported was 1168 f/s (356m/s) with 1671 ft-lbs (509m) of energy at the muzzle. At 200 yards (183m) the bullet had slowed to 747.8 f/s (228m/s) and the energy dropped to 685.3 ft-lbs. (209m). The bullet drop was calculated at 75.64 inches (1.921m) at 200 yards (183m).

Haag (personal communication March 27, 2015) also fired a high-quality replica of a British Ferguson rifle. His test firings used a .650-caliber (16.5mm) lead ball weighing 402 grains (26 grams). The powder was Goex brand of 60 grains (3.88 grams) mixed from FFFg and FFFg in equal proportions. The firing produced several shots that exceeded the speed of sound, with one reaching 1237.9 f/s (377.3m/s). He also fired .610-caliber balls (16.4mm) with FFFg Swiss black powder with muzzle velocities at 1000 f/s (304m/s) and below.

Mike Willegal in his 1999 online Brown Bess accuracy analysis reports the British Brown Bess cartridge contained 6 to 8 drams of black powder which is equivalent to 165 (10.69 grams) to 220 grains (14.25 grams). He recognizes that some of that load is required to prime the flash pan. He tested two different granulations of black powder using an American Civil War Minié ball, presumably a .58-caliber (14.7mm). He found that on one case that 20 grains (6.1 grams) of powder produced a muzzle velocity of slightly less than 400 f/s (122m/s) and by increasing the charge up to 140 grains (9 grams) of powder he achieved a muzzle velocity of 1200 f/s (366m/s). His second black powder of a different size using a 50 grain (3.2 grams) charge up to a 130 grains (8.4 grams) charge resulted in muzzle velocities of just over 600 f/s (182.8m/s) to nearly 1400 f/s (476.7m/s). He does not specify which grade or size of black powder he used in his experiments.

Willegal's primary goal was to model musket accuracy and range. He calculated how the .75-caliber (19mm) Brown Bess using a .69-caliber (17.5mm) ball would drop at 1000 (304.8m/s), 900 (274.3m/s), 800 (243.8m/s), and 700 f/s (213.3m/s). He determined the drop to be from an average of 20 feet (6m) if fired at 1000 f/s (304.8m/s). His point is that for a shot to hit a target at 300 yards (274.3m) the gun would have to be aimed at a point 20 feet (6m) and 7.2 inches (18.2cm) above the target. Conversely at 75 yards (68.5m) the bullet is expected to drop only 22 inches (55.9cm) with a muzzle velocity of 1000 f/s (304.8m/s). The slower the muzzle velocity the greater the drop over distance. He cites Gibbon (1860) in describing the variation in drop of .69-caliber (17.5mm) musket shots at 200 yards (182.8m) being from 36 inches (91.4cm) to 54 inches (1.37m). Willegal concludes his analysis by stating the Brown Bess musket was unlikely to be effective beyond 150 yards (114m) given the reality of field conditions and general lack of target practice by armies of the eighteen and early nineteenth centuries.

Results of Live Fire Experiment and General Observations

The live fire experiment collected a significant amount of controlled data on muzzle velocity, bullet penetration, and bullet deformation from seven different flintlock firearms that represent the common Colonial and Revolutionary War firearms. The data is presented in both quantified and qualitative forms. Additional observations are presented that are relevant to shooting incident reconstruction. Archaeologists often recover impact deformed lead balls from Colonial era sites. The live fire experiment data enhances the capability to understand archaeological lead ball finds as well as the distribution pattern and context in which they found. An appreciation of how a bullet found its way into the ground as determined by this and other allows for better archaeological interpretation of the site or event being investigated.

Laid Cartridge Paper Observations

The laid paper cartridges were largely fully combusted during firing. The high-speed video confirms that cartridge paper did not fully combust in the barrel during firing, but numerous fragments were expelled with the gases, and most combust before reaching the ground. Fragments of laid cartridge paper are clearly seen in the videos being expelled down range from the barrels. Incompletely consumed cartridge paper pieces were found 15 feet to 30 feet down range from the shooting bench. In one case, about 30 feet from the bench, a piece of smoldering cartridge paper caused a grass fire that was quickly extinguished. The burn area was about 12 inches in diameter. Historically, the same phenomena were observed after shooting events. Lines of shooters have been interpreted from the discarded cartridge ends and fires are known to have been started by gun fire. Archaeologically the evidence for fires, cartridge paper, and cartridge tails or ends is not likely to survive. However, a careful vetting of oral history and historical documentation may reveal similar phenomena and coupled with surviving artifact patterns may allow for identification of potential firing lines.



Figure 17. French 1763/66 musket being fired, Note the laid cartridge paper debris and the buck and ball in the center right of the debris field.



Figure 18. Bits of unburned laid cartridge paper in the duff.



Figure 19. Tails of laid paper cartridges lay strewn on the ground at the site where the muskets were loaded.

Lead Ball Ranges as a Function of Velocity and Energy Loss

When a bullet is fired, it achieves an initial maximum velocity then begins to deaccelerate due to energy loss as a function of drag or resistance, and of course, gravity. Bullets have a maximum range they can travel before all energy and forward momentum is lost. However, bullets often fail to reach that maximum range due to hitting a target or some media. They also fail to reach maximum range as a function of the angle at which the shot was fired, was the barrel level to the ground or elevated? An elevated barrel will send the bullet further down range than a horizontally aimed barrel simply due to physics. The less velocity a bullet has when it drops to the ground the less deformation is likely to occur. This information is important to shooting event reconstruction such as determining if the recovered bullets are on or near a firing line or simply under or over shots. The live fire experiment data helps to address these questions in several ways.

During the live fire experiments shooting ranges were 94 yards for the first series and then reduced to 25 and 30 yards for buck and ball firing. Shooting into ballistic gel was done at 25 yards.

In dry air at 20 °C (68 °F), the speed of sound is 343 meters per second (1,125 ft/s; 1,235 km/h; 767 mph). The speed of sound is a function of air density at the local site and will vary with location. The range site weather conditions during the live fire experiment are consistent with the speed of sound being 1125 f/s (343 m/s).

The live fire experiment used seven flintlock firearms. The black powder charges were either 110 grains for the British and French muskets, British Artillery Carbine, and the 1740 Postdam musket or 85 grains for the Thomas Earle Colonial fowler. Reduced charges were also used during the ballistic gelatin experimental firing to capture the bullet in the gelatin.

The Thomas Earle fowler, .58-caliber using a rolled cartridge with a .520-caliber ball, achieved a muzzle velocity range of 1160 to 1345 f/s with average initial muzzle velocity of 1259.3 f/s. The fowler was also fired using a .580-caliber unpatched (loose) ball which resulted in a muzzle velocity range of 1415 to 1480 f/s with an average muzzle velocity of 1444 f/s. A three shot string using buckshot was also fired with 85 grains of black powder. The first shot used a .58-caliber ball and three .282 diameter buckshot that had an initial muzzle velocity of 655 f/s. The second buckshot firing used 6 loose .282 diameter buckshot also resulted in a muzzle velocity of 655 f/s. The third shot used 6 loose .282 diameter buckshot. On this shot the muzzle velocity varied for the buckshot. The first three buckshot exited the muzzle as a group and achieved 495 f/s, the second two buckshot were closely spaced but achieved only 240 f/s, and the third buckshot was slower yet at 230 f/s. Except for the buck and ball shot and the two buckshot all single ball shots exceeded the speed of sound.

The external ballistic calculations indicate the .520 and .580 balls would travel the farthest and have greater penetration capability at greater ranges than the larger caliber bullets used in this experiment. See the graphs for the bullet drop calculations that emphasize this point.

The .65-caliber British Artillery Carbine firing a .580 diameter ball also exceeded the speed of sound for eight of its ten shots. The initial muzzle velocity ranged from 960 f/s to 1335 f/s with an average of 1018 f/s, which is below the speed of sound. It is notable that the two shots that were well below the speed of sound resulted in dropping the average muzzle velocity for all shots to less than the speed of sound. Like the fowler the carbine balls would go further and have greater penetration capability than the larger caliber muskets. This can be observed in the bullet drop graphs.

The British 1742 Long Land Pattern musket, .76-caliber, was fired five times using a 110-grain charge with a paper patched .69 diameter ball. The muzzle velocity ranged from 780 to 870 f/s with an average velocity of 822 f/s. All shots were less than the speed of sound and had far less range as can be observed in the drop graphs.



Figure 20. The British 1742 Long Land pattern musket during live firing with flame and smoke being discharged from the muzzle, cartridge paper and the ball shown right of the smoke column.

The French 1728/41 .70-.72 slightly oval bore was fired 5 times with a 110-grain charge with a paper patched ball .626 in diameter. This shot string ranged in muzzle velocity from 775 to 960 f/s with an average muzzle velocity of 870 f/s. Like the British 1742 Long Land the French 1728/41 did not reach the speed of sound. One reason for not reaching the speed of sound may be the oval bore. This shape may not have allowed the balls to fully conform to the bore which, including windage, allowed more gas to escape around the balls during firing. Such an event would lower the gas pressure and the bullet velocity.

The French 1763/66 musket, .68-caliber, using a 110-grain charge with a .626 diameter ball. It was fired 15 times with paper patched buck and ball loads. The three buckshot were .282 diameter and the ball .626 diameter. The 15 shots had a muzzle velocity range of 865 to 1215 f/s. Eight of the fifteen shots were sub-sonic with an average muzzle velocity somewhat below Mach 1 at 1009 f/s. The muzzle velocity range is wide for this gun and is probably due to the amount of windage between the .68 bore firing a .626 ball. Since 7 shots did exceed the speed of sound, and all variables were held constant between the 1728/41 and the 1763/66 French muskets, this helps support the contention that the earlier style's oval bore shape influenced the lower muzzle velocities seen in that shot string.

The Hessian style 1740 Postdam musket is .73-caliber. It was fired five time with a 110 grain charge and a .626 ball. Like the British 1742 and the French 1728/41 muskets the muzzle velocity did not achieve Mach 1. It ranged from 712 to 858 f/s with an average of 817 f/s.

Ball Velocity and Calculated Bullet Drop Ranges

The initial muzzle height above ground, muzzle velocity, along with ambient air temperature, wind speed, site elevation, and humidity were then used to calculate external ballistics data using the Round Ball Ballistics Calculator found online

(http://www.ctmuzzleloaders.com/ctml_experiments/rbballistics/rbballistics.html) and downloaded to a hard drive. Comparison with other ballistic calculators including the Sierra Infinity-6 and Shooters Calculator.com indicates the ball velocity, energy, and time calculation are within 1% (usually 1% less) of the various programs.

Using the Round Ball Ballistic Calculator the data were entered for each shot using muzzle height above ground as a dependent variable. The amount of bullet rise and/or drop was then calculated for each round at 25 yards, 35 yards, and 100 yards to simulate known combat ranges. Graphs were output through the calculator for minimum and maximum velocity for each gun type. The following graphs provide a visual summary of when a ball is likely to hit the ground given the powder charge, its weight or mass, and initial muzzle velocity. For each graph the Velocity is expressed as feet per second (f/s), Energy loss is expressed as foot pounds of energy (fpe), the X axis is range in yards, and the Y axis is velocity as f/s and energy as fpe

It is important to note when fpe drops below the 300 to 200 fpe range the potential for lethal wounding is unlikely. Assuming the intended target is a human the fpe needed to incapacitate is dependent on age of the individual and the type of clothing being worn as well as the type of media the bullet strikes.

Each graph has a textual summary to aid in explanation of the data presentation.

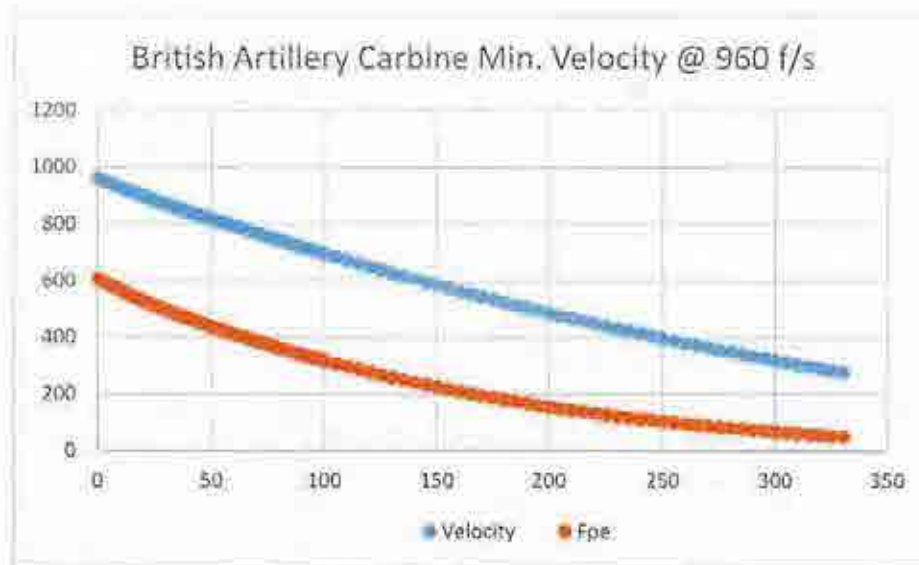


Figure 21. **British Artillery Carbine** - .580 ball and 110 grain powder charge at 960 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1.3 inches at 25 yards, 1.2 inches at 35 yards, and drop 14.6 inches at 100 yards then it is calculated to strike the ground at 150 yards.



Figure 22. **British Artillery Carbine** - .580 ball and 110 grain powder charge at 1335 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.7 inch at 25 yards, 0.7 inch at 35 yards, and drop 9.5 inches at 100 yards then it is calculated to strike the ground at 170 yards.

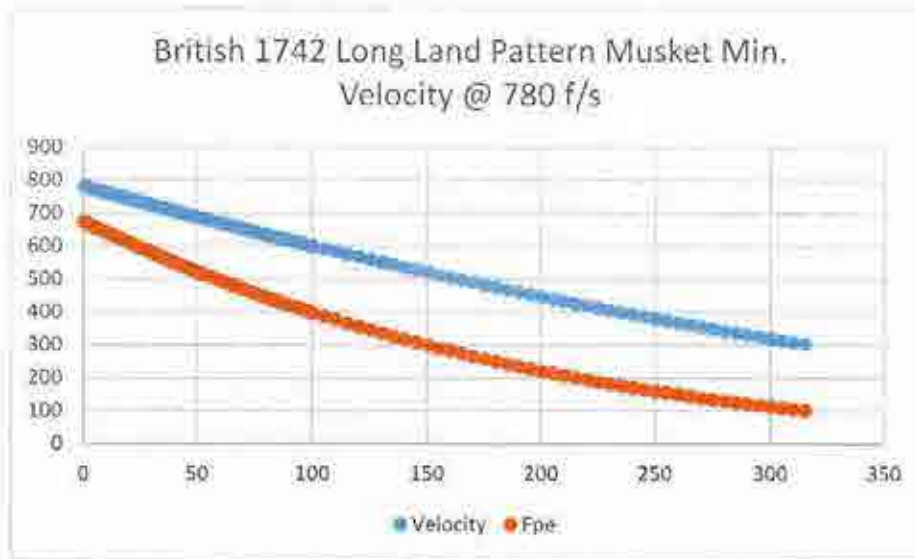


Figure 23. **British 1742 Long Land Pattern Musket** - .69 ball and 110 powder charge at 780 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1.6 inches at 25 yards, 1.7 inches at 35 yards, and drop 20.2 inches at 100 yards then it is calculated to strike the ground at 135 yards.

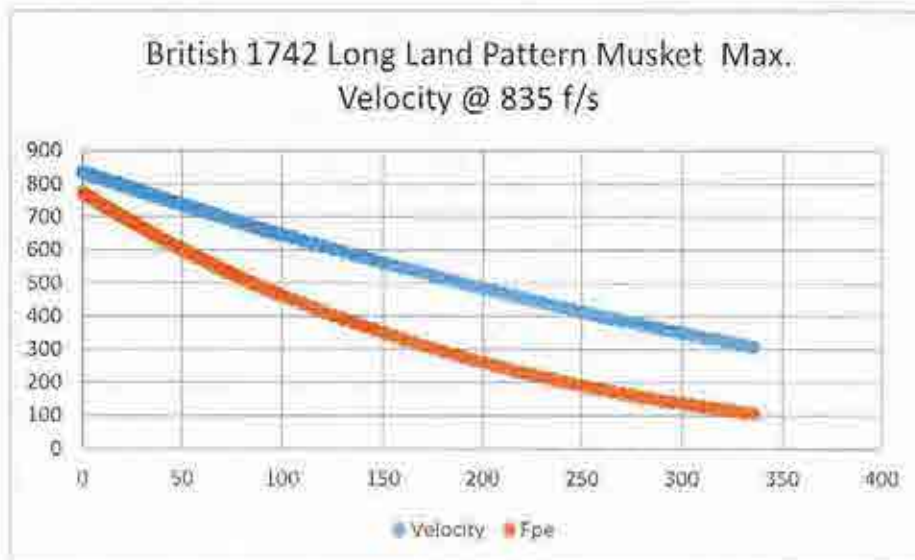


Figure 24. **British 1742 Long Land Pattern Musket** - .69 ball and 110 powder charge at 835 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1.6 inches at 25 yards, 1.4 inches at 35 yards, and drop 17.5 inches at 100 yards then it is calculated to strike the ground at 140 yards.

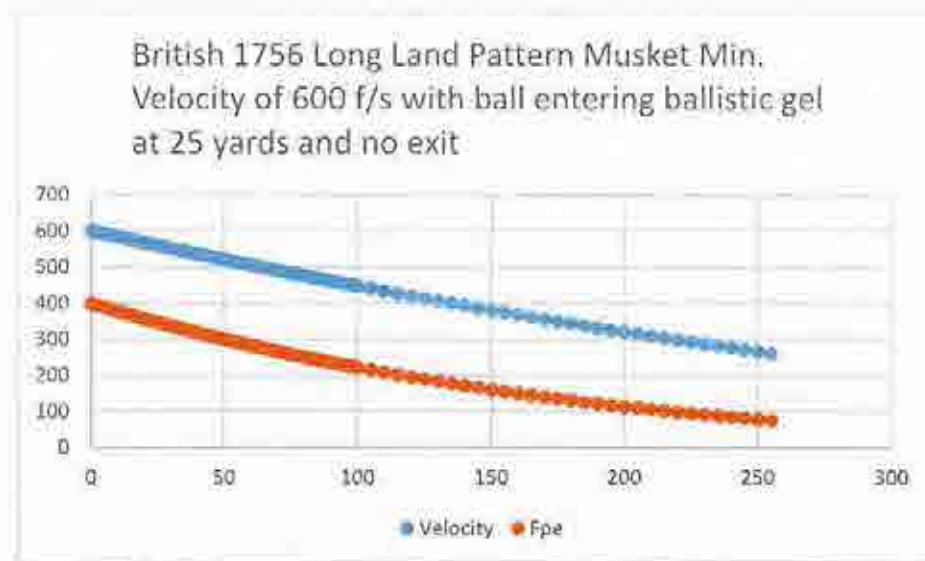


Figure 25. **British 1756 Long Land Pattern Musket** - .69 ball with 75 grain powder charge with a velocity of 600 f/s fired at 25 yards into Clear Ballistic gel with ball being retained in the gel. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 3.2 inches at 25 yards, 3.1 inches at 35 yards, and drop 36.4 inches at 100 yards then it is calculated to strike the ground at 110 yards.



Figure 26. **British 1756 Long Land Pattern Musket** - .69 ball with 110 grain powder charge with a velocity of 830 f/s fired at 25 yards into Clear Ballistic gel with ball passing through 32 inches of gel. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1.6 inches at 25 yards, 1.6 inches at 35 yards, and drop 17.8 inches at 100 yards then it is calculated to strike the ground at 140 yards.



Figure 27. **British 1756 Long Land Pattern Musket** - .69 ball with 110 grain powder charge fired at 25 yards into Clear Ballistic gel with ball passing through 32 inches of gel. Ball exited gel at 360 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 10.6 inches at 35 yards, and it is calculated to strike the ground at 80 yards.

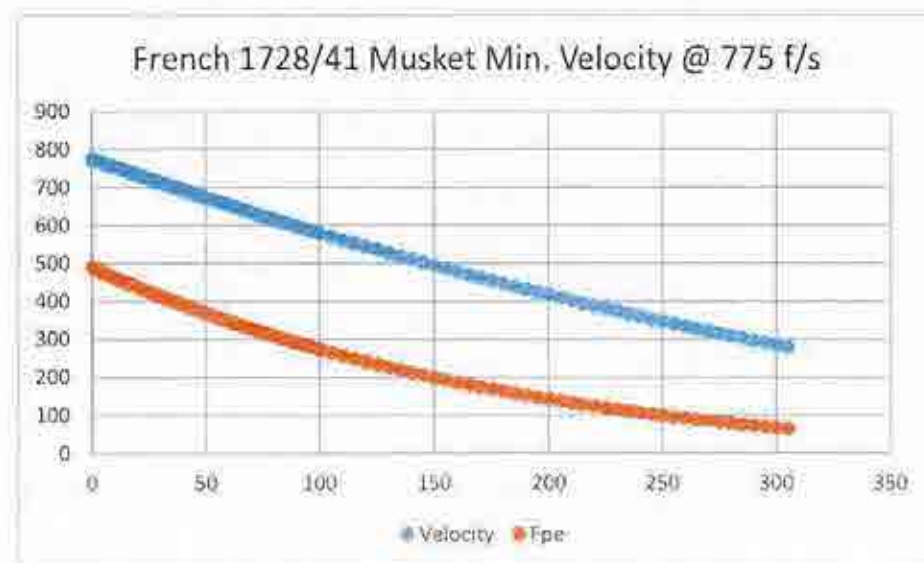


Figure 28. **French 1728/41 Musket** - .662 ball with 110 grain powder charge with a velocity of 775 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the calculated drop over distance indicates the ball is calculated to rise 2 inches at 25 yards, 1.7 inches at 35 yards, and drop 21.7 inches at 100 yards then it is calculated to strike the ground at 130 yards.

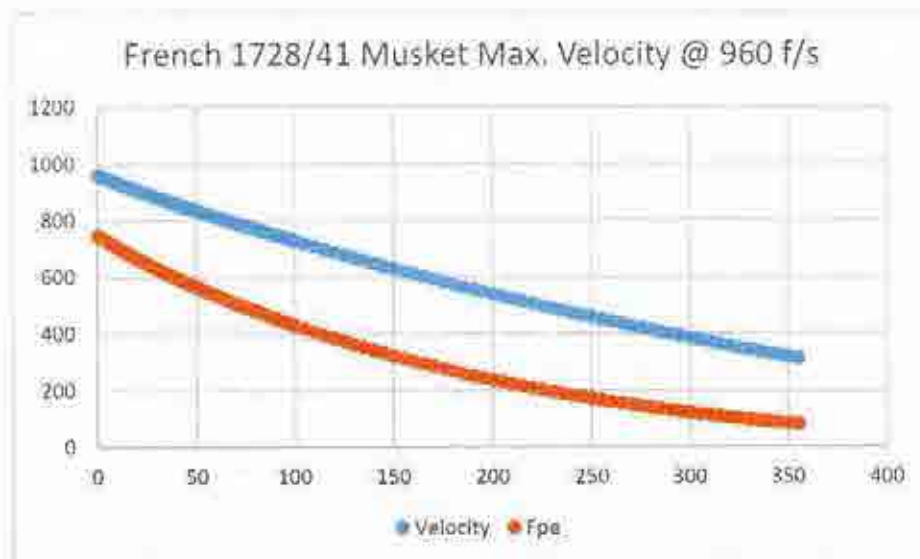


Figure 29. **French 1728/41 Musket** - .662 ball with 110 grain powder charge with a velocity of 960 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1.2 inches at 25 yards, 1.1 inches at 35 yards, and drop 13.6 inches at 100 yards then it is calculated to strike the ground at 150 yards.

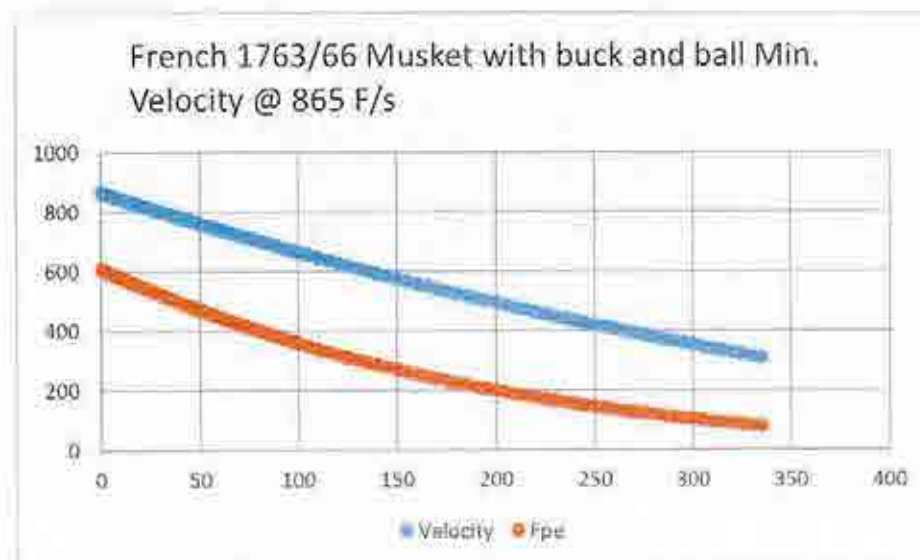


Figure 30. **French 1763/66 Musket** - .662 ball and 3 .282 buckshot with 110 grain powder charge with a velocity of 865 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1.5 inches at 25 yards, 1.4 inches at 35 yards, and drop 16.4 inches at 100 yards then it is calculated to strike the ground at 140 yards.



Figure 31. **French 1763/66 Musket** - .662 ball and 3 .282 buckshot with 110 grain powder charge with a velocity of 1215 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.7 inch at 25 yards, 0.7 inch at 35 yards, and drop 9.4 inches at 100 yards then it is calculated to strike the ground at 175 yards.



Figure 32. **French 1763/66 Musket** - .662 ball with 110 grain powder charge with a velocity of 1025 f/s fired into Clear Ballistic gel, and passing through 32 inches of gel. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1 inch at 25 yards, 0.9 inch at 35 yards, and drop 11.9 inches at 100 yards then it is calculated to strike the ground at 160 yards.

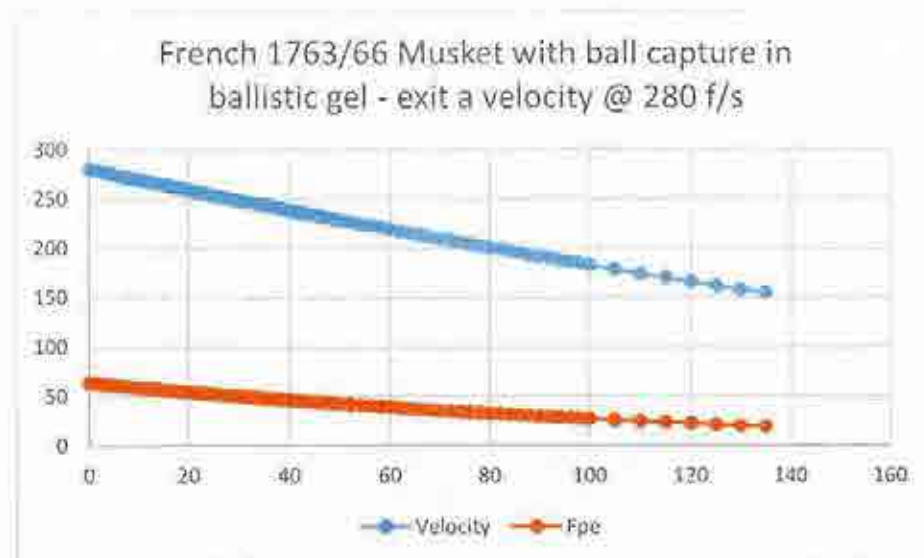


Figure 33. **French 1763/66 Musket** - .662 ball with 110 grain powder charge fired into Clear Ballistic gel at 25 yards, and passing through 32 inches of gel with an exit velocity of 280 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 16.1 inches at 35 yards, and drop 11.9 inches at 100 yards then the ball will strike the ground at 70 yards.

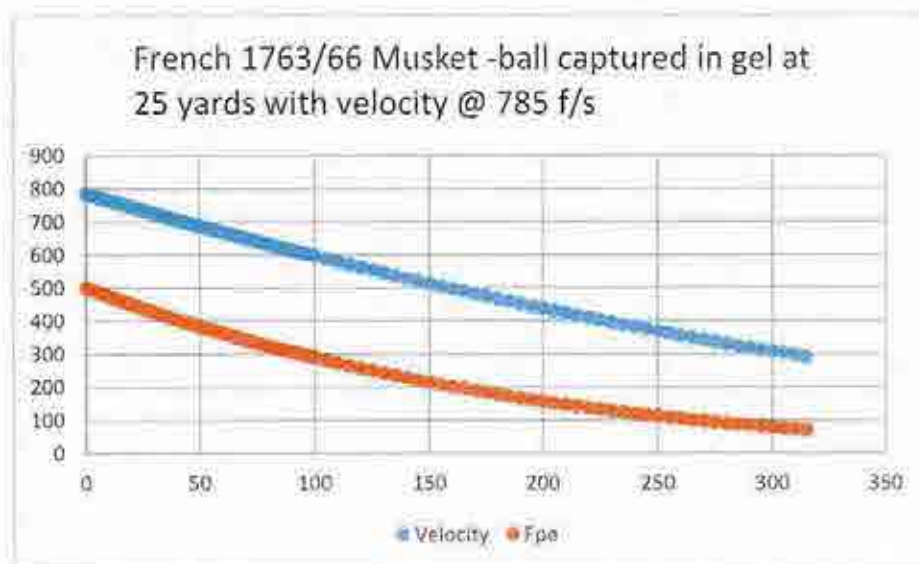


Figure 34. **French 1763/66 Musket** - .662 ball with 75 grain powder charge with a velocity of 785 f/s fired into Clear Ballistic gel at 25 yards, with ball retained in gel. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the calculated drop over distance indicates the ball would have struck the ground at 135 yards.

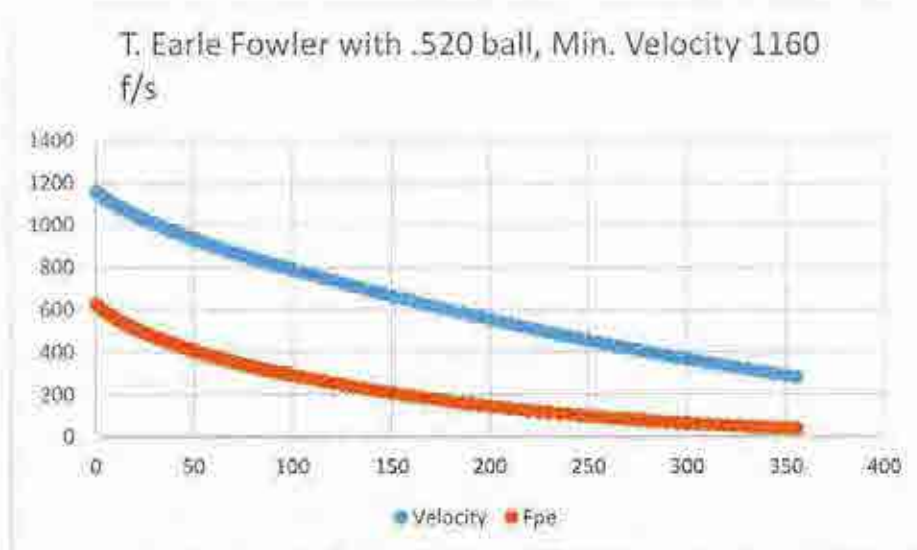


Figure 35. **Thomas Earle Fowler** - .520 ball with 85 grain powder charge with a velocity of 1160 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.8 inch at 25 yards, 0.9 inch at 35 yards, and drop 11.4 inches at 100 yards then it is calculated to strike the ground at 160 yards.

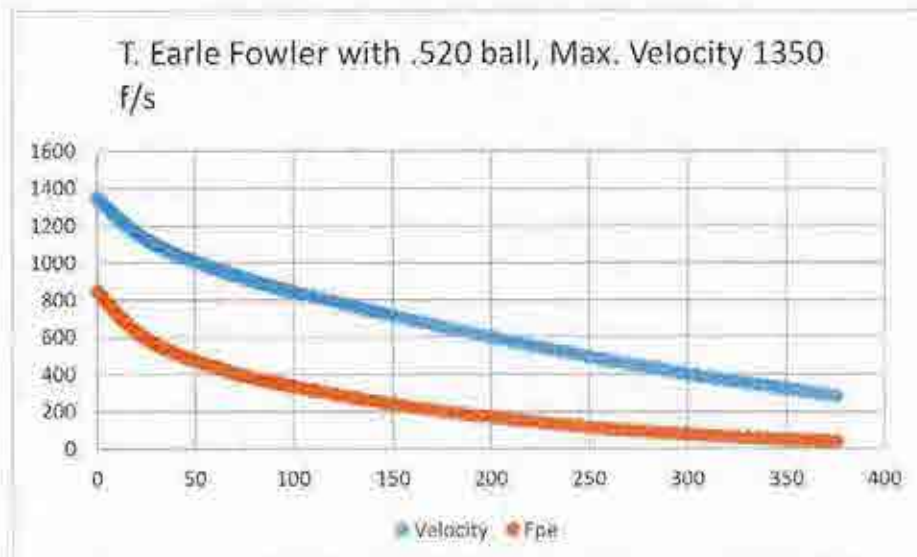


Figure 36. **Thomas Earle Fowler** - .520 ball with 85 grain powder charge with a velocity of 1350 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.7 inch at 25 yards, 0.7 inch at 35 yards, and drop 9.8 inches at 100 yards then it is calculated to strike the ground at 170 yards.

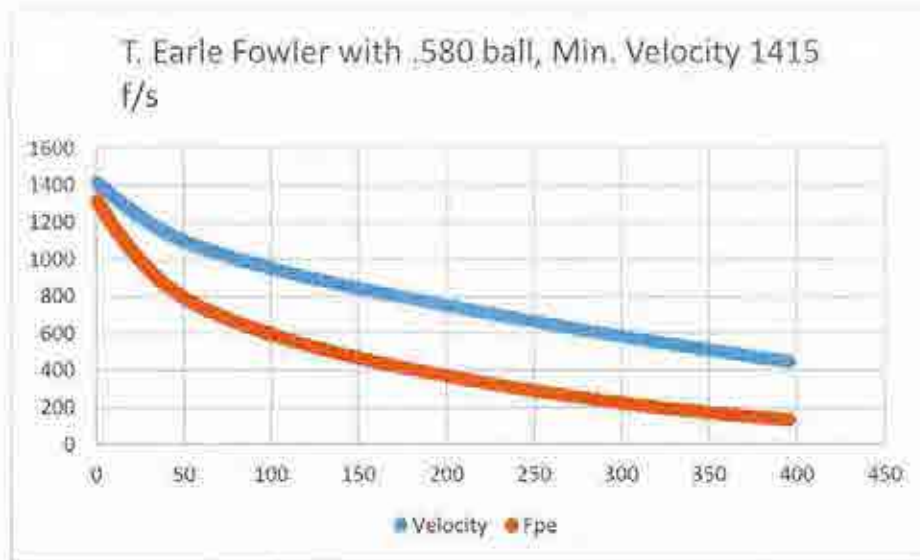


Figure 37. **Thomas Earle Fowler** - .580 ball with 85 grain powder charge with a velocity of 1415 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.6 inch at 25 yards, 0.6 inch at 35 yards, and drop 7.9 inches at 100 yards then it is calculated to strike the ground at 185 yards.

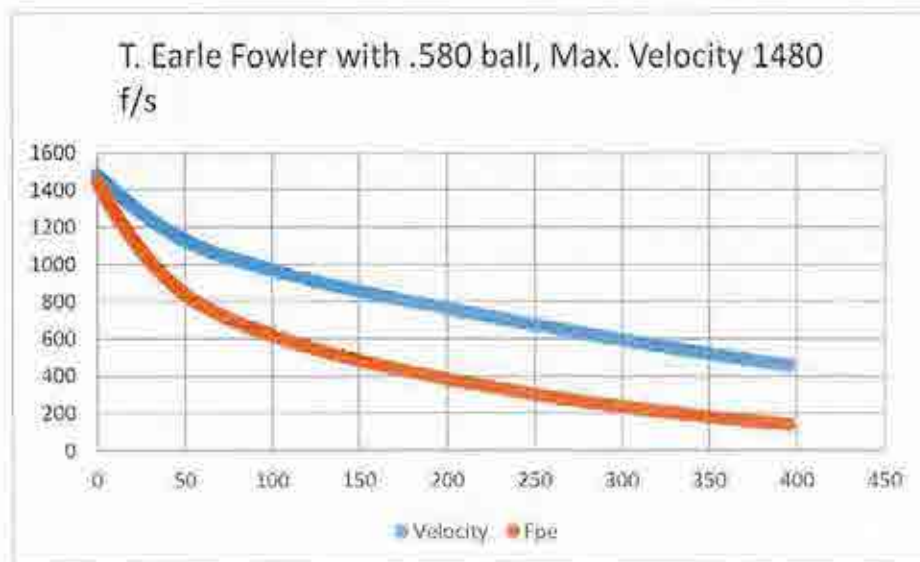


Figure 38. **Thomas Earle Fowler** - .580 ball with 85 grain powder charge with a velocity of 1480 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.6 inch at 25 yards, 0.6 inch at 35 yards, and drop 7.5 inches at 100 yards then it is calculated to strike the ground at 185 yards.

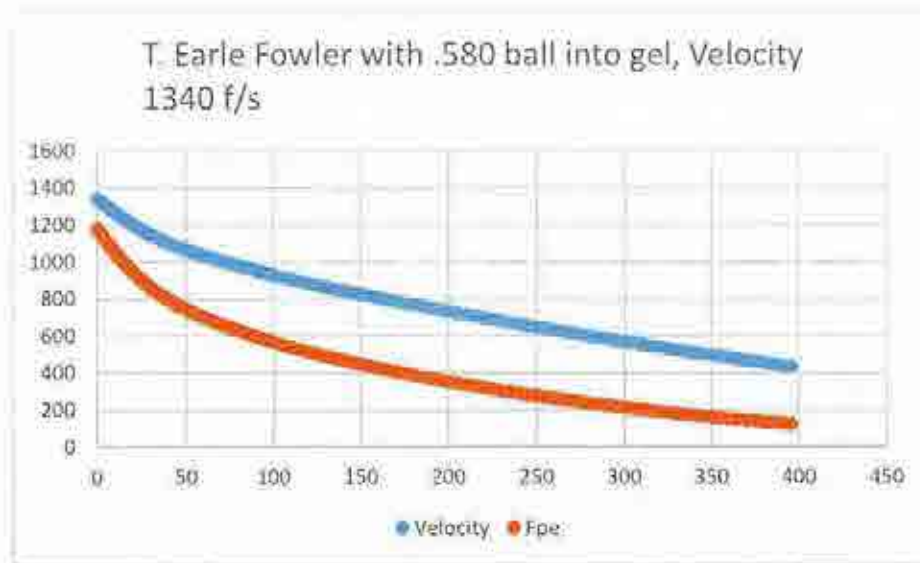


Figure 39. **Thomas Earle Fowler** - .580 ball with 85 grain powder charge fired into Clear Ballistic gel at 25 yards, and passing through 32 inches of gel with at a velocity of 1340 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.7 inch at 35 yards, and drop 8.3 inches at 100 yards then the ball will strike the ground at 180 yards.

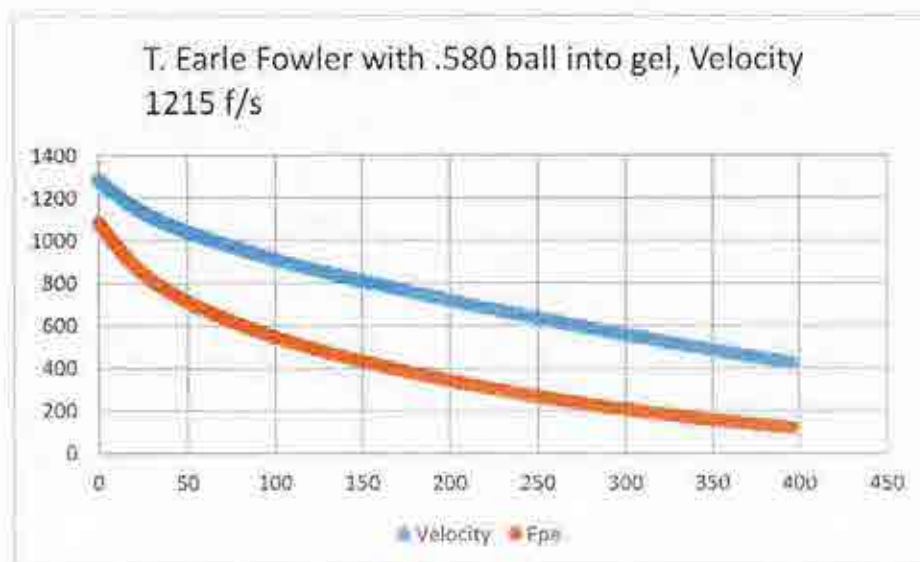


Figure 40. **Thomas Earle Fowler** - .580 ball with 85 grain powder charge fired into Clear Ballistic gel at 25 yards, and passing through 32 inches of gel with at a velocity of 1285 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.7 inch at 35 yards, and drop 8.8 inches at 100 yards then the ball will strike the ground at 175 yards. Note: The graph legend incorrectly states the velocity as 1215 f/s, but it is correct in the caption at 1280 f/s.

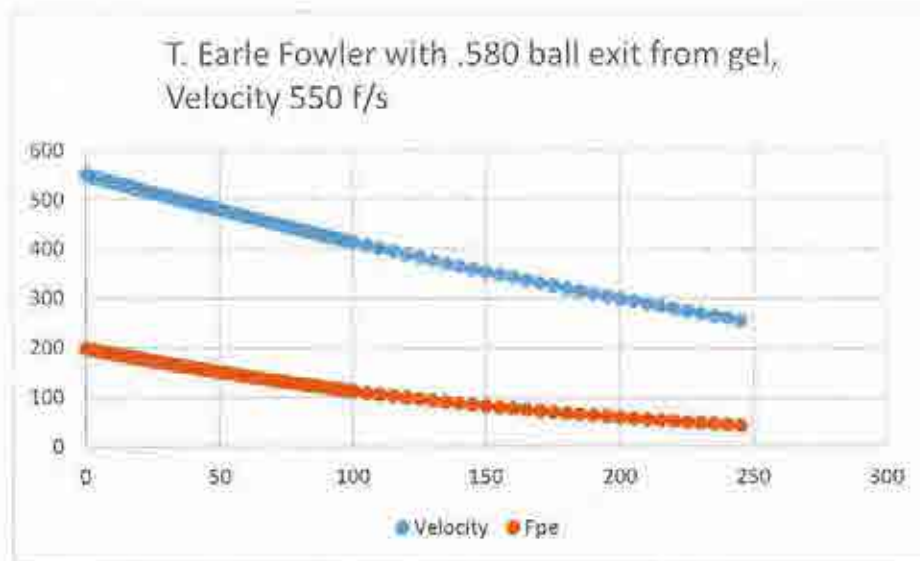


Figure 41. **Thomas Earle Fowler** - .580 ball with 85 grain powder charge fired into Clear Ballistic gel at 25 yards, and passing through 32 inches of gel with an exit velocity of 550 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 3.7 inches at 35 yards, and drop 43.1 inches at 100 yards then the ball will strike the ground at 105 yards.

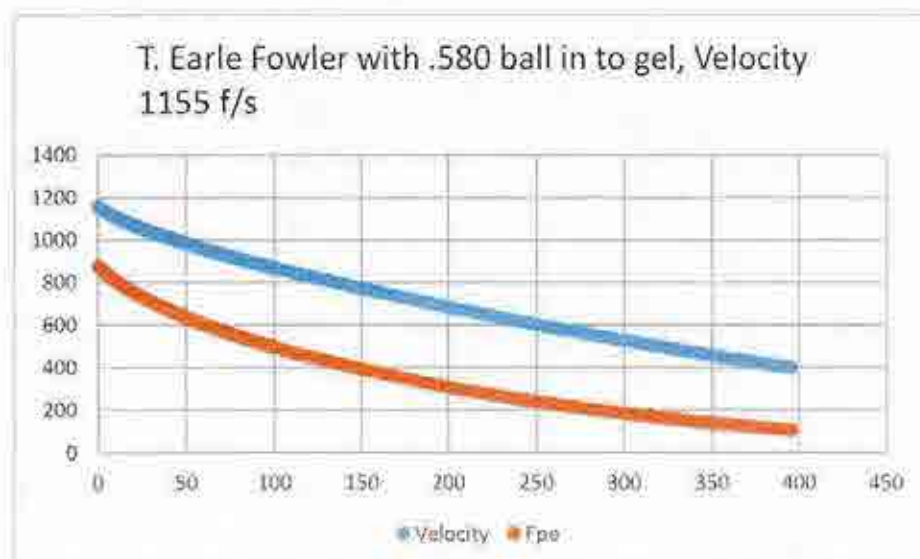


Figure 42. **Thomas Earle Fowler** - .580 ball with 75 grain powder charge fired into Clear Ballistic gel at 25 yards at a velocity of 1155 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 0.8 inch at 25 yards, 0.8 inch at 35 yards, and drop 9.8 inches at 100 yards then the ball will strike the ground at 170 yards.

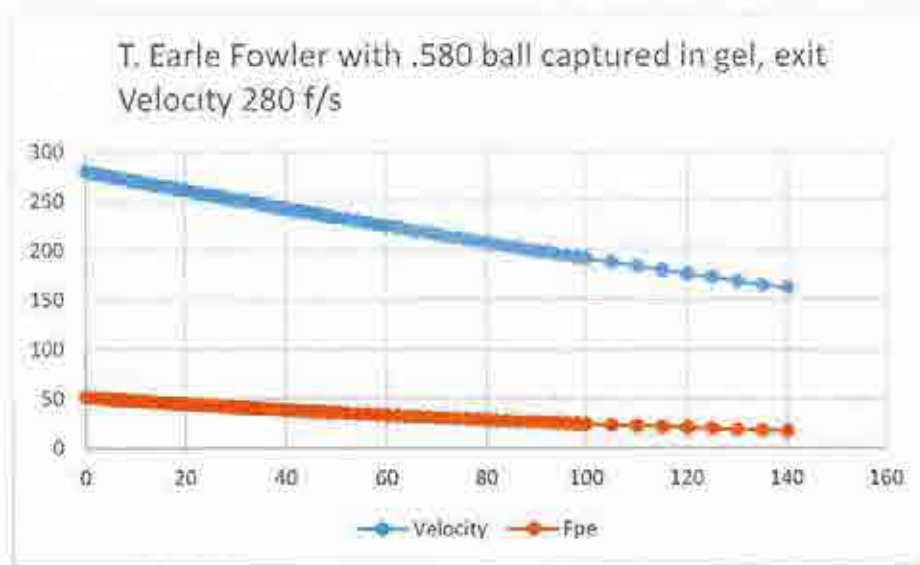


Figure 43. **Thomas Earle Fowler** - .580 ball with 75 grain powder charge fired into Clear Ballistic gel at 25 yards with an exit velocity of 280 f/s, however the ball rebounded and was captured in the gel. Hypothetically with the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 15.7 inches at 35 yards then the ball will strike the ground at 70 yards.

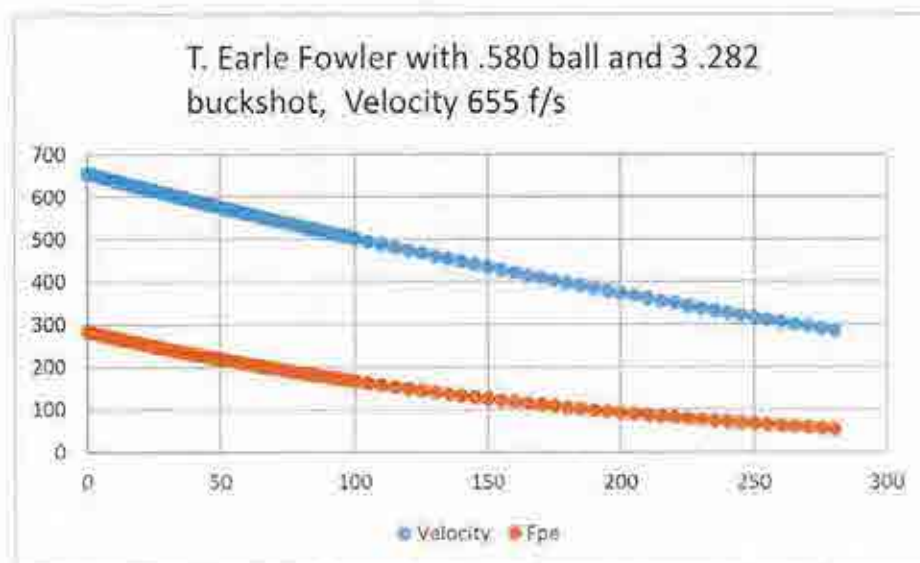


Figure 44. **Thomas Earle Fowler** – loaded with .580 ball and 3 .282 buckshot with 85 grain powder charge with a velocity of 655 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 2.9 inches at 25 yards, 2.5 inches at 35 yards, and drop 2.4 inches at 100 yards then the shot will strike the ground at 115 yards.

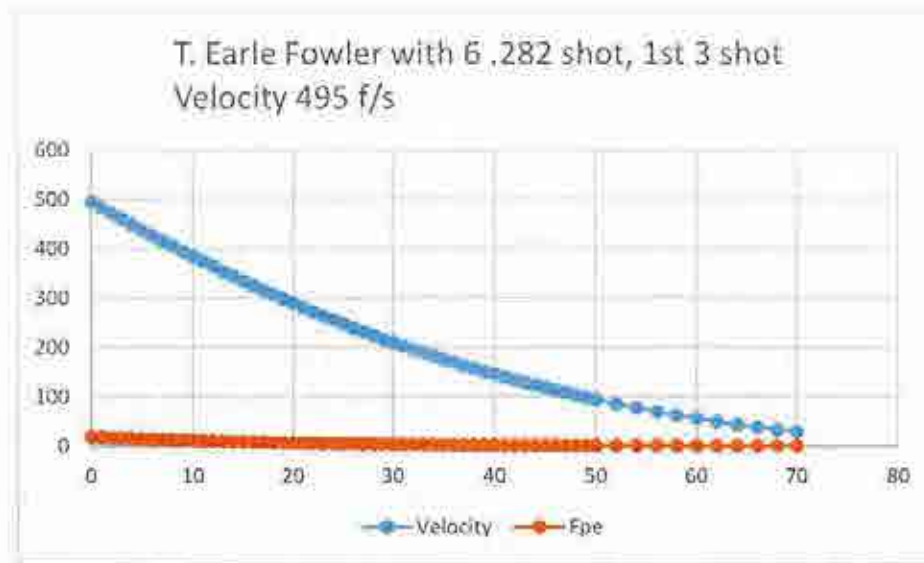


Figure 45. **Thomas Earle Fowler** – loaded with 6 - .282 buckshot with 85 grain powder charge. The first 3 shot had a velocity of 495 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the shot is calculated to rise 39.7 inches at 25 yards, 43.7 inches at 35 yards, and the shot will strike the ground at 55 yards.



Figure 46. **Thomas Earle Fowler** – loaded with 6 - .282 buckshot with 85 grain powder charge. The second 2 shot had a velocity of 240 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the shot is calculated to drop 43.6 inches at 25 yards and the shot will strike the ground at 26 yards.

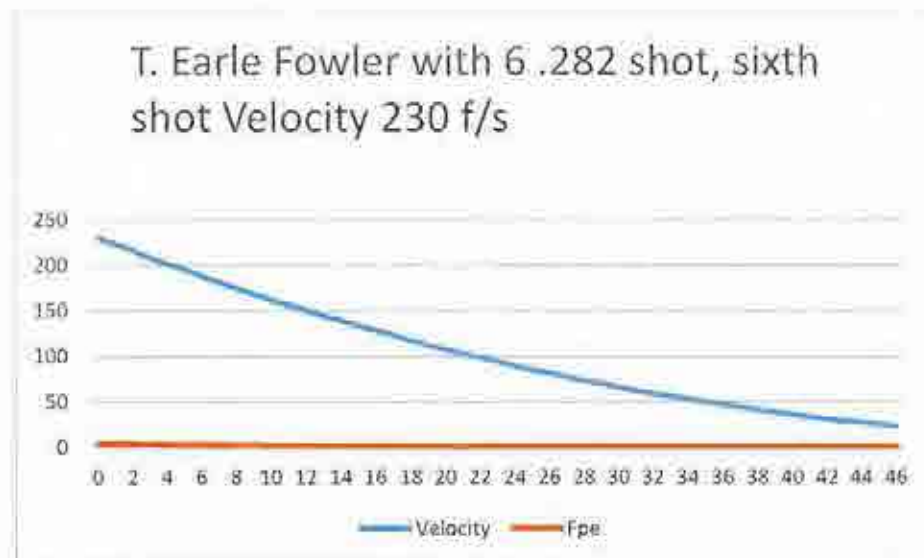


Figure 47. **Thomas Earle Fowler** – loaded with 6 - .282 buckshot with 85 grain powder charge. The sixth shot had a velocity of 230 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the shot is calculated to drop 7.5 inches at 25 yards and the shot will strike the ground at 30 yards.

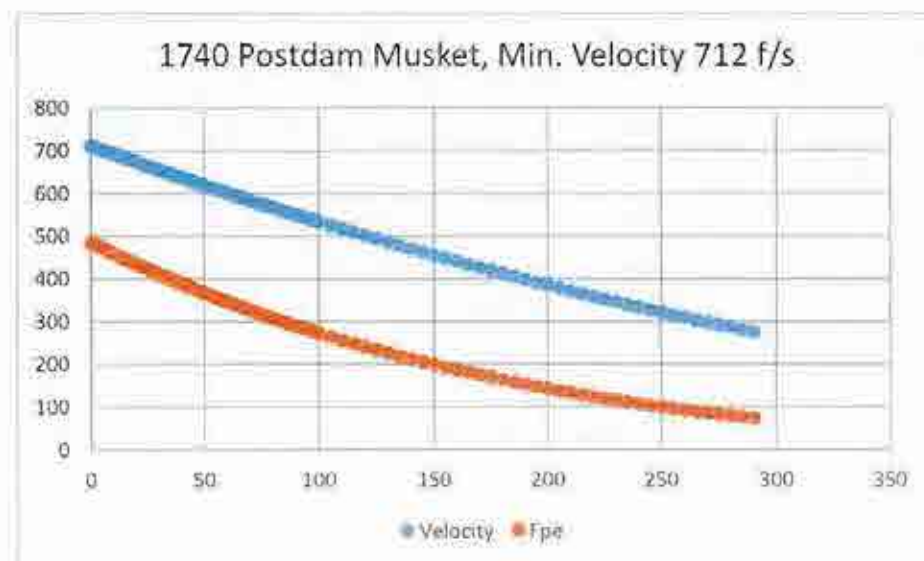


Figure 48. **1740 Potsdam Musket** - .626 ball with 110 grain powder charge with a velocity of 712 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 2.2 inches at 25 yards, 2 inches at 35 yards, and drop 25.5 inches at 100 yards then it is calculated to strike the ground at 125 yards.



Figure 49. **1740 Potsdam Musket** - .626 ball with 110 grain powder charge with a velocity of 858 f/s. With the barrel level (0 degree of elevation) and at an average of 49 inches above the ground the ball is calculated to rise 1.4 inches at 25 yards, 1.3 inches at 35 yards, and drop 16.6 inches at 100 yards then it is calculated to strike the ground at 140 yards.

Most recovered balls and buckshot struck some type of media before coming to rest. Many hit the sand backstop at the 94-yard range, some hit and passed through the target frame, others struck and embedded in or passed through the wooden palisade behind the earth berm. Those bullets are discussed in the bullet penetration and deformation section. The few bullets that did not strike media and were recovered down range at or near ground surface represent those that dropped at the end of their flight path. The landform where the firing range was established slopes, very slightly, down and away from the shooting bench. Past the palisade line the ground drops a bit more noticeably. That ground slope allowed bullets to travel farther than the predicted model suggested. While there is no one-to-one correlation with the caliber and muzzle velocity or where they dropped, bullets were recovered within a one or two standard error deviation of the predicted drop range.

Tissue Simulate Live Firing Results

Tissue simulants are materials that approximate the density of human tissue and approximate the penetration resistance of soft tissue (Boackle 2011). Bullets fired into tissue simulants create a temporary and a permanent wound cavity that mimics actual wound trauma reasonably well (MacPherson 1994:63-78). The temporary cavity can be observed using high speed videography. The permanent cavity is what remains after the bullet passes through or is captured in the tissue simulant. A variety of studies demonstrate that tissue simulants meeting the standard BB penetration test (MacPherson 199:74-75) achieve dynamic equivalence which can then be used to model wound trauma. When a spherical ball enters the tissue simulant at a given velocity the gelatin begins to deform as a response to strain forces acting upon it. The gelatin deforms

elastically until it reaches a critical point where it ruptures and then rebounds to near its original position. The strain forces caused by the bullet diameter, mass, and velocity create an elastic response in the gelatin that creates a wound track or cavity that expands with the initial strain and then contracts leaving a visible but small wound track.



Figure 50. Ballistic gelatin block firing test set up. Two blocks placed end to end create 32 inches of length. Note the wound tracks from previous shots in the two lower blocks. The large cavity on the left side is a .626 diameter ball entering the block and creating an initial wound cavity.

The live fire experiment used Clear Ballistic® gelatin obtained from Clear Ballistics®. Clear Ballistic gelatin meets the FBI and NATO protocols for testing terminal ballistics of human tissue simulants. The protocol standard states that an acceptable calibrated gelatin must have a steel BB (.177 inch or 4.5mm in diameter) shot at 590 f/s (180 m/s) at 10 feet (3.04m) come to rest between 1.73 and 1.8 inches (4.4 and 4.6cm) into the gelatin.

The Clear Ballistics' blocks are 6x6 inches square and 16 inches long. The blocks were placed on a specially constructed wooden table covered with 2 ½ inch thick foam pads. Two blocks were placed end to end and aligned creating a 32-inch long area of gelatin. A roughly 6x6 inch square of cloth, meant to simulate the thickness and weight of average Colonial era clothing, was placed on the front and rear of the lower blocks.

The cloth squares were made up broadcloth followed by a piece of serge to represent a coat and lining. Behind these was another piece of broadcloth and a piece serge to represent a waistcoat and lining. The final piece of cloth was a square of linen representing a shirt. The cloth was replica fabric that is the same weight and weave of known historic cloth constructed of similar materials (Potter and Hanson 2014; Moore and Haynes 2003; Brown 1999; Kidwell and Christman 1974).

The British 1756 Long Land pattern musket, .76-caliber, was fired nine times in the ballistic gelatin shot series. The paper patched ball was .69 in diameter. The first four shots used a 110-grain charge that resulted in muzzle velocities of 760, 790, 815, and 830 f/s. For one shot the entrance and exit velocity for the gelatin was recorded. The entrance velocity was 830 f/s with the ball passing through 32 inches of gelatin and exiting at 360 f/s, with a loss of 470 f/s.



Figure 51. One of the cloth squares, 6x6 inch, used to simulate a Colonial era uniform clothing thickness. Two shots have passed through the cloth, and a recovered .626 diameter ball is shown next to the hole it created. Note: entry holes in cloth or tissue are often smaller than the bullet that created it due to the elasticity of the media.

The black powder charge was reduced to 75-grains to capture the ball in the gelatin. Five shots were fired, reaching 600 f/s, 605 f/s, 615 f/s, and two at 630 f/s. Four balls missed or passed through the gelatin. One, 600 f/s, passed through the side of the blocks and exited at 22 inches into the gelatin. One shot reaching 630 f/s was captured at 24 inches into the gelatin.

The French 1763/66 musket was fired twice into the gelatin. The first round was fired with a 110-grain charge and a .626 diameter ball. The muzzle velocity achieved 1025 f/s which is just above Mach 1. The ball passed through 32 inches of gelatin and exited the block at 280 f/s.

The second shot used the .626 diameter ball but with a 75-grain charge to reduce the velocity enough to capture the ball in the gelatin. The muzzle velocity was 785 f/s and the ball passed through the gelatin along with a piece of the cloth, but did not break the plane of the block and the ball rebounded back into the block. It was recovered at 29 inches into the gelatin block (see ball penetration and deformation section).



Figure 52. A .69 diameter ball fired from a British 1756 Long Land Pattern musket exiting 32 inches of gelatin. Note the initial wound cavity, bits of cloth in the wound cavity on the right and a larger piece of cloth exiting the block behind the ball.



Figure 53. A .69 diameter ball fired from the British 1756 Long Land Pattern musket with 75 grains of powder at 25 yards. The ball traveling at 630 f/s traveled 24 inches into the gelatin blocks.



Figure 54. A fabric impressed .69 diameter ball fired from the British 1756 Long Land Pattern musket with 75 grains of powder at 25 yards. The fabric impressions resulted from passing through the simulated uniform clothing.

The ball that rebounded back into the gelatin is a known effect in the study of wound trauma. The rebounding effect seen with the French 1763/66 musket fired at 785 f/s into gelatin is consistent with the MacPherson's (1994:156) experimental work. It reflects the static strain, kinetic energy dispersion, and gelatin excitation of the bullet as it passed through the tissue simulant. MacPherson (1994:224-227) concluded that bullets that rebound have lost enough velocity to fall below the minimum velocity to either penetrate or exit the media. In cases involving human skin that minimum velocity is somewhat variable but generally falls into the range of 200 to 350 f/s. In part that is dependent on age, health, and body part involved.

The high-speed video shows the uniform fabric being pushed into the wound track and then the ball, given its greater velocity and aerodynamic capability, passing ahead of the cloth. The cloth often left debris in the wound channel that is easily observable as small fragments of thread embedded in the wound track. In some cases the larger piece of cloth will exit the gelatin behind the ball, but in some cases the cloth lost momentum and remained in the wound channel.



Figure 55. A .626 diameter ball fired from a French 1763/66 musket creating an initial wound cavity in gelatin. The ball entered the block at 1155 f/s, has passed through one 16-inch long block, and is moving through the second block.



Figure 56. The .626 diameter ball fired from the French 1763/66 musket at it exits the second gelatin block at a velocity of 280 f/s. The ball has passed through 32 inches of gelatin and lost 745 f/s of velocity passing through the tissue simulant.



Figure 57. A .626 diameter ball fired from the French 1763/66 musket at 785 f/s passes through 32 inches of gelatin but does not break the plane of the tissue simulant.

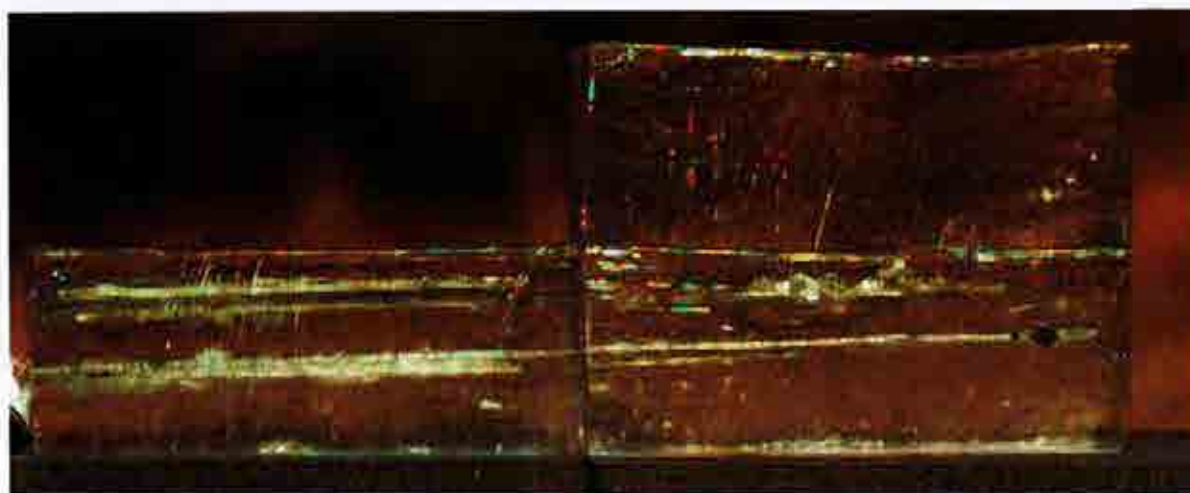


Figure 58. A .626 diameter ball fired from the French 1763/66 musket at 785 f/s that rebounded or was pulled back into the tissue simulant coming to rest about 30 inches from the entry point. Note the dark spot to the left of the ball, which is a piece of fabric carried into the wound channel.



Figure 59. Fragments of fabric recovered from gelatin wound tracks. L to R. recovered from entry site 4 inch in, 12 inches in, 12 to 14 inches in, 14 to 16 inches in, 15 to 16 inches in and 30 inches in. In a real wound track the fabric would be sources for infection and sepsis, a known issue in eighteenth century medicine.

The Thomas Earle fowler was fired four times at the gelatin blocks. The first two shots used the .58 diameter ball without patch and with an 85-grain charge. The first shot achieved a muzzle velocity of 1285 f/s, passed through 32 inches of gelatin and exited the blocks at 550 f/s. The second shot entered the blocks at 1340 f/s and passed through 32 inches of gelatin. The third shot had the powder charge reduced to 75-grains. It entered the block at 1140 f/s and exited the block. The fourth shot, also using the 75-grain powder charge, entered the block at 1155 f/s and exited the block after passing through 32 inches of gelatin at 280 f/s. The ball was recovered on the ground surface at 100 yards from the shooting bench and 75 yards beyond the gelatin block position.

Ball Penetration and Deformation

The dynamics of bullet penetration in any media are complex and dependent on velocity at the time of impact, the density of the media it strikes, and drag or resistance on the bullet during flight. Miller and Bailey's (1979:449-463) study of drag drawn from eighteenth and nineteenth

cannon firing sources demonstrated that with the development of the 1868 Bashforth chronographic instrument, reasonably accurate velocity and drag measurements were attainable. They also found the earlier ballistic pendulums (ca. 1787 and ca. 1839) were less accurate than the Bashforth chronograph, but still produced reasonable data. Using modern data and mathematical formulae they created drag models for spheres ranging in velocity from Mach 0.3 to Mach 2.0. Their basic research is incorporated into the ballistic models employed in this study.

Likewise, bullet deformation is dependent on the same issues. MacPherson (1994) studied and modeled bullet penetration as related to incapacitation from wound trauma. Bullet penetration in any substance, be it soil, wet or dry wood, or human tissue, is dependent on several factors including the energy it has when it strikes a substance. This is kinetic energy, and here we express it as foot/pounds (ft-lbs). A soft lead bullet traveling at a velocity has mass (weight), speed, and stored but dissipating energy as it fights resistance or drag. The object or media the bullet strikes, if soft, transfers the kinetic energy of the bullet in the form of heat; if hard the bullet is deformed to some degree or another as a function of the laws of thermodynamics. The force that results in bullet deformation is simply Newton's Third Law of Motion, for every action there is an equal and opposite reaction. There is not an absolute direct correlation to bullet deformation since kinetic energy and damage is not due directly to energy absorption, but to the amount of force per area on the bullet and media. Bullets behave according to physical laws, and by knowing the velocity, mass (weight), and other variables bullet deformation and penetration can be mathematically modelled (MacPherson 1994:11-14). Modern ballistic calculators take these variables into account when calculating muzzle velocity, changes in velocity over time, air resistance (drag), and gravity, to determine bullet speed loss over distance and drop from the angle of the firearm muzzle relative to the ground surface.

In penetration studies the terms low and high velocity have specific definitions. Low velocity is considered to be a bullet traveling at 300 f/s or less, while high velocity is considered to be a bullet traveling at 600 f/s or more (MacPherson 1994:74-77). For all practical purposes all charges fired in the arms in this experiment achieved high velocity as used in penetration and wound trauma studies.

Bullet penetration and expansion or deformation is modelled using the principles of fluid dynamics. Bullets expand more in higher density fluids and less in lower density fluids. Lower density fluids include water, tissue, tissue simulants, and experiments have shown that bullets penetrate and expand or deform in consistent ways in these lower density situations (MacPherson 1994:122-125; Fackler 1988:555-557).

Bullets yield or deform in response to the force applied on it. A ball striking a hard strong solid (e.g. rock, hard woods, etc.) will deform at relatively low velocities because the hard and rigid surfaces produce large forces on the bullet (Kerckhoff et al. 2015; Mattijssen et al. 2016). The diameter of the bullet and its mass (weight, usually expressed as sectional density) is another factor in the amount of deformation that occurs when a ball strikes a hard or rigid surface. Pure or dead soft lead (not pure in the chemical sense, but with impurities present as such low levels as to not be significant) is very ductile and deforms significantly based on static loading as confirmed in experiments (MacPherson 1994:127) using spherical balls and black powder loads.

The experiments show that lead spherical balls show slight deformation at about 690 f/s velocity and increase accordingly at higher velocities when fired into soft fluids like tissue or water.

Lucien Haag (personal communication December 15, 2004) conducted an experiment firing lead spherical balls from modern cartridge pistols and rifles using controlled black powder charges. He fired each shot into a water tank at velocities ranging from 360 f/s to 1026 f/s for .45-caliber balls in a pistol and ranging from 1049 f/s to 1529 f/s for .45-caliber balls fired from a rifle. His investigation found the higher the velocity the greater the deformation. His lower velocity impacts ranging from 630 f/s to 1026 f/s had virtually no deformation while rounds fired above 1049 f/s to 1138 f/s showed some slight flattening. Recovered balls fired between 1281 and 1336 f/s were showed flattening to nearly half the diameter, while the round fired at 1529 f/s was nearly completely flattened. Haag's experiments largely confirm the work MacPherson (1994).

Bullet Deformation Correlated with Velocity

Deformation seen in the lead balls fired in the various guns in the current experiment largely mimic the results reported by MacPherson (1994:126-130). Balls fired into tissue simulant, the loose sand backstop, dry soft woods, and wet pine, showed the least deformation. The smaller balls, .520-caliber and .580-caliber showed the least deformation and the larger balls, .69-caliber, showed the largest deformation at any given velocity, which is consistent with metal yielding functions correlated to the bullet's sectional density (MacPherson 1994:142-143). These phenomena are clearly illustrated in the following images and graphic representations.



Figure 60. Unfired buckshot and bullet examples as used in the live fire experiments. l to r – 0.28-inch buckshot, 0.31-inch buckshot, 0.520-inch ball, 0.580-inch ball, 0.626-inch ball, 0.662-inch ball, and 0.69-inch ball.



Figure 61. Unfired, 0.69-inch ball, 0.69 ball fired at 600 f/s that struck ground surface at 100 yards, 0.69 ball fired at 630 f/s that struck a wood table, foam, and ballistic gel at 25 yards and was collected laying on the foam at the back of 32 inches of ballistic gel, and a 0.69 ball fired at 630 f/s that was captured in the ballistic gel at 25 yards after passing through 28 inches of gel. Note fabric impression on second and fourth balls.



Figure 62. Unfired 0.626- inch ball, 0.626 ball fired at 775 f/s recovered from a soil and sand backstop at 100 yards and a 0.626 ball fired at 785 f/s and captured in ballistic gel at 25 yards after passing through 30 inches of gel. Note ramrod mark on second ball and fabric impressions on third ball.



Figure 63. Top row: Unfired 0.282-inch buckshot and fired 0.282-inch buckshot at 865 f/s. Second row: Unfired 0.626-inch ball and fired 0.626-inch ball at 865 f/s. Third row: Unfired 0.69-inch ball and fired 0.69-inch ball at 870 f/s. Note each recovered in the sand and soil backstop at 100 yards.



Figure 64. Unfired 0.626-inch ball, fired balls l to r fired at 905 f/s, 960 f/s, 960 f/s, and 1090 f/s. All balls recovered at 100 yards in sand and soil backstop. Note third ball from the left passed through a pine 4x4 target frame upright and the fourth ball from left also struck the edge of the pine target frame before embedding in the backstop.



Figure 65. Left column, unfired 0.626-inch ball, fired 0.626 balls at 1110 f/s and 1175 f/s, both found in sand and soil backstop. Second column, unfired 0.282 buckshot and fired 0.282 buckshot at 1110 f/s found in sand and soil backstop. Third column, unfired .580-inch ball and fired 0.580 ball at 1135 f/s found in sand and soil backstop. Fourth column, 0.580 ball fired at 1155 f/s, and Fifth column, 0.580 ball fired at 1170 f/s and found in soil and sand backstop. All balls recovered at 100 yards.



Figure 66. Top row, Unfired 0.626-inch ball, fired 0.626 ball at 1205 f/s and found in sand and soil backstop, fired 0.626 ball at 1215 f/s which nicked the target frame post and was found in the sand and soil backstop. Bottom row, Unfired 0.520-inch ball, fired 0.520 ball at 1215 f/s that hit oak palisade paling and ricocheted back into sand and soil backstop, fired 0.520 ball at 1250 f/s which hit a pine palisade paling and ricocheted back into sand and soil backstop, 0.520 ball at 1240 f/s that struck an oak palisade paling and fell to the ground below the fence, and 0.520 ball fired at 1285 f/s that went through a 4x4 pine target frame upright and was recovered in the sand and soil backstop. All balls found at 100 yards.



Figure 67. Unfired 0.520-inch ball and two fired 0.520 balls, center fired at 1345 f/s and hit pine target frame and right fired at 1350 f/s and hit pine target frame. Both found in sand and soil backstop at 100 yards. Note banding on last ball from being upset in firing from the musket.



Figure 68. Unfired 0.580-inch ball and fired balls, second – fired at 1415 f/s and struck oak palisade paling and found in sand and soil backstop below fence, third – fired at 1435 f/s and found in sand and soil backstop, fourth – fired at 1480 f/s and found in sand and soil backstop. All balls recovered at 100 yards.

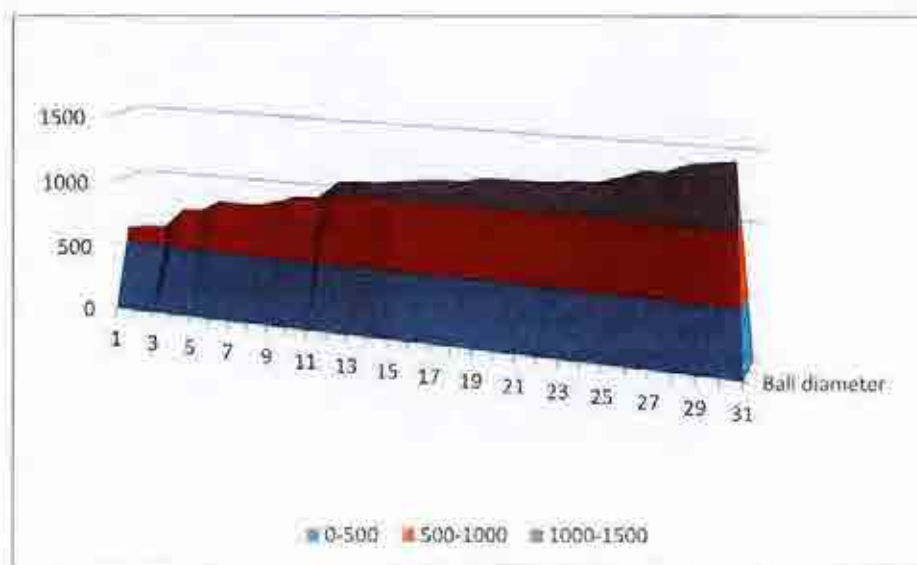


Figure 69. Flattening is observed on balls as velocity increases regardless of ball diameter. The greater the muzzle velocity the larger the degree of flattening observed.

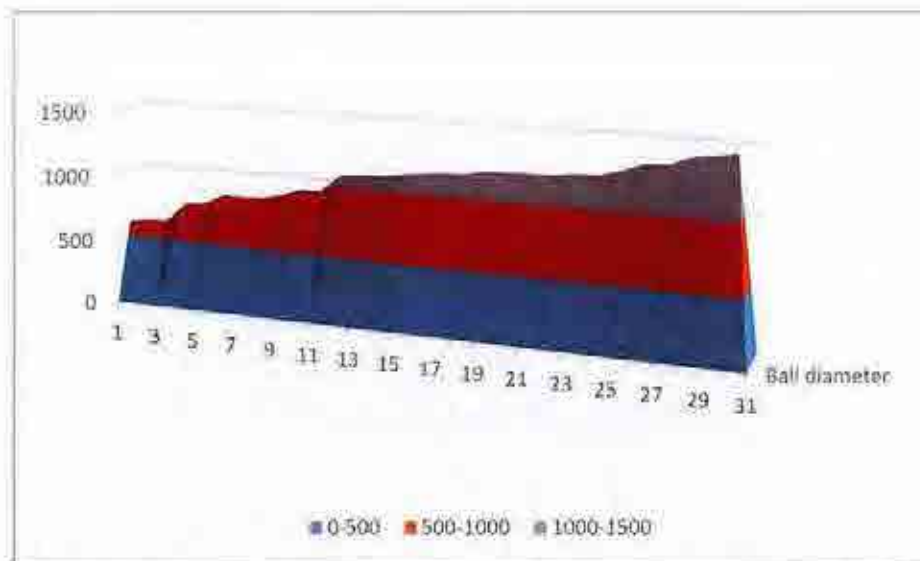


Figure 70. Change in diameter, A, observed on balls as velocity increases regardless of ball diameter. The greater the muzzle velocity the larger the degree of diameter A change observed.

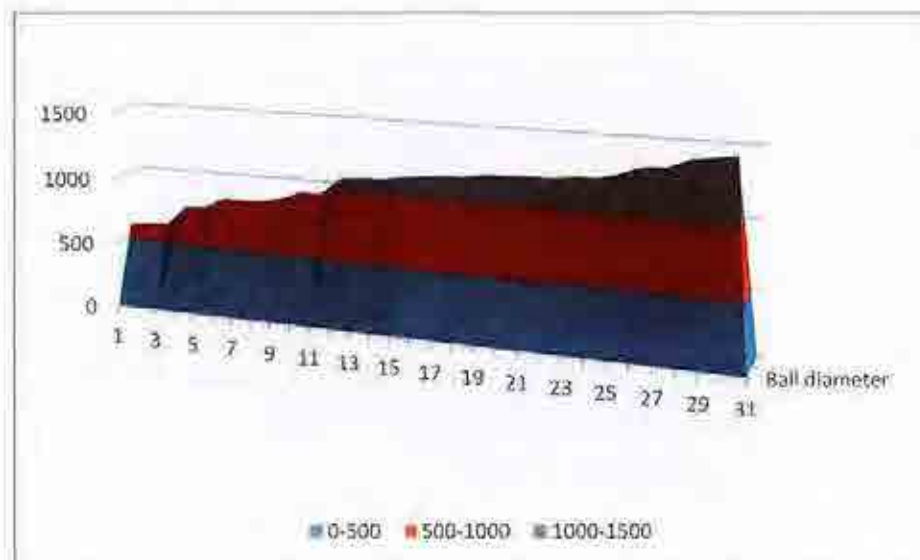


Figure 71. Change in diameter, C, observed on balls as velocity increases regardless of ball diameter. The greater the muzzle velocity the larger the degree of diameter C change observed.

The graphs of relationship of ball deformation to velocity clearly show a general linear trend, in that that the greater the velocity the greater the deformation. A scatter plot with a linear regression trend line confirms this relationship. However, the relationship can only be considered as a general trend, as the variable of the media which a bullet strikes is not likely to be found in the archaeological record.

Lead Bullet Deformation Index

For more than 30 years an intuitive scale based on personal experience with shooting muzzle loading weapons has been used to assign value to impact deformed bullets. The scale is descriptive using Low, Medium, and High Velocity Impact terms as a means of defining impact deformation (e.g. Scott et al. 1989). The current live fire experiments where bullets fired at known velocities were recovered allows a new more quantitative-base index scale to be suggested. While this scale has recognized weaknesses, it does refine and replace the even less precise Low, Medium, and High Velocity Impact scale that is in common use (e.g. Scott et al. 1989).

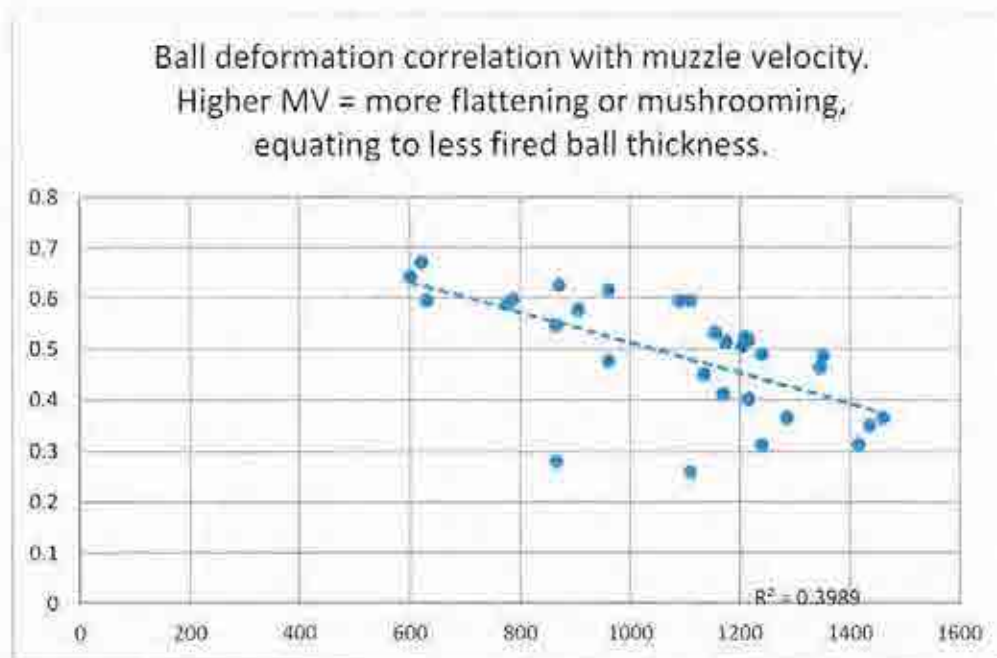


Figure 72. Muzzle velocity compared to thickness or flattening of fired balls. The fired ball thickness is in tenths of inches on the left and muzzle velocity is shown on the bottom as feet per second. There is general agreement that balls flatten at higher velocities, but the linear regression trendline indicates the relationship is only about 40%. This further reinforces the fact that the nature of the media the ball strikes at the end of its flight as well as remaining velocity and kinetic energy are significant factors in deformation.

Using the ball deformation data acquired during the live fire experiment we present an ordinal or nominal bullet deformation rating scale to equate to an approximate velocity range. We emphasize that the **Lead Bullet Deformation Index** scale we propose cannot be used as a one-to-one correlate to absolute velocity and the amount of deformation, rather it is intended to give the user an approximation of the relationship between velocity and deformation. Using the ordinal rating scale model results in a number that can be tested using ANOVA, Regression, or Chi-square tests.

We define the **Lead Bullet Deformation Index** to be:

Based on a mixed qualitative and quantitative set of observations of the fired bullet a rating scale number can be determined. Measurements should include the maximum diameter (diameter A), the thickness or amount of flattening (diameter B), and the minimum diameter that is not in the plane of deformation (diameter C). These data can be plotted and trendlines applied through scatter plots and various statistical regression procedures to observe and refine trends.

Qualitative observations range from the amount of impact scarring present from minimal to extreme as to the degree of impact flattening (commonly called mushrooming) the bullet exhibits.

The ordinal scale is:

1. Likely velocity is less than 800 f/s based on little or no visible scarring or flattening. Diameter measurements are essentially consistent for the three measured points on the ball.
2. Likely velocity is between 800 and 1100 f/s based on slight to moderate visible impact scarring, possibly some imbedded residue or negative impressions (sand or rock inclusions or impressions), and some impact flattening that is less than half the diameter of the ball. Diameter measurements show flattening to less than one half the ball's original diameter or caliber.
3. Likely velocity is greater than 1100 f/s based on significant impact scarring and flattening of ball to becoming totally mushroomed. Measurements should reflect the thickness of the flattening relative to the measured diameter as extreme.

We suggest when there is a question of whether a ball falls in one ordinal range or another that it is appropriate to use an 0.5 number. An example is that a ball shows some minimal impact scarring and some moderate flattening would be assigned a 1. However, the measurements in the A and C axes are essentially the same, but the thickness or flattening measurement is notable and could be assigned a 2. We suggest assigning it a 1.5 rating. That data can be used to refine any statistical analysis. We do not endorse any finer intermediate resolution between the numbers as this will only be pure speculation and confuse any statistical analysis.



Figure 73. Fired ball that struck wood showing little to no impact deformation. This would score as a 1 on the Bullet Deformation Index indicating a likely velocity of less than 800 f/s.



Figure 74. Fired ball with moderate impact scarring and deformation that is consistent with a Bullet Deformation Index of 2 indicating a likely velocity of 800-1100 f/s.



Figure 75. Fired ball that hit a palisade post with a wire tie. The impact scarring is moderate, but the impact deformation is more than moderate but not extreme. It scores a 2.5 on the Bullet Deformation Index.



Figure 76. Two fired balls with significant impact scarring as well as impact deformation. The left ball shows significant flattening and the right ball also shows significant deformation. The left ball is scored at 3 and the right ball could be scored a 2.5 on the Bullet Deformation Index.



Figure 77. A Fowler .580-caliber ball hit on a live oak palisade paling with insets showing the complete flattening or mushrooming effect of a high velocity hit on a hard media. The muzzle velocity was 1240 f/s. The ball scores a 3 on the Bullet Deformation Index.

Other Observations

Sometimes balls fired from muzzle loading firearms exhibit a variety of characteristics that can be mistaken for impact deformation. These can be identified and interpreted with careful observation and analysis. Sivilich (2016), Foard (2012), Foard and Morris (2012) and Harding (2012) have observed, described, and interpreted these and other non-impact characteristics on spherical lead bullets from a variety of archaeological contexts. Sivilich was one of the first to use live fire data to validate interpretations of impact and non-impact marks on fired balls. The current live fire empirical evidence further verifies and validates the archaeological based descriptions and interpretations as well as those of Sivilich (2016).

The live fire recovered bullet data confirm characteristics found on balls relate to the loading or the type of load. These characteristics, like ramrod marks from loading the round, or faceting or multiple dimples on one surface likely indicate a buck and ball round. Another characteristic is a smooth band completely or partially around the ball. The banding effect occurs when a ball is upset in the bore during loading, slightly compressing the bullet. When fired the propellant gases further force the ball against the bore creating the band. It is a tell-tale indication of a ball being fired from a smooth bore gun. The following figures illustrate several of these observed non-impact related characteristics.



Figure 78. Typical denting and slight flattening caused by a ramrod head being forced against the ball during the loading of a muzzle loading firearm. There are different ramrod shapes for different firearms types and that data can be used to aid in identification of the type of gun in which the ball was fired.



Figure 79. A fired ball with three dimples or small facets adjacent to one another. This dimple pattern is typical of firing deformation when three buckshot are placed on a larger ball, known as a buck and ball round. The flattening observed on the left side of the ball is impact deformation.



Figure 80. The slight to moderate faceting seen on the two buckshot are typical of buckshot that were in proximity to one another when loaded and fired. The soft lead is compressed in loading and firing causing the buckshot to press against and deform one another. The flat area on the left side of the right buckshot is a ramrod impression.



Figure 81. A 40x magnification of the bore band seen on balls fired in smooth bore guns. Note the micro striations run parallel to the line of the bore. This ball also has buckshot dimpling on the upper right surface.

Microscopic examination of fired balls can often reveal a number of other micro characteristics that may aid in identifying the media in which the ball imbedded or passed through. Traces or impressions of wood, soil (e. g. sand or gravel), fabric impressions or fabric adhering to the ball surface, or even bone embedded in the ball aid in the interpretation of the shooting incident under investigation.



Figure 82. A 75x magnification of the surface of an unfired lead ball. The lines are a result of the differential cooling at a micro scale of the lead ball when it was cast in a mold. Mold lines and these microscopic cooling lines are indicative of a cast ball. These microscopic cooling lines are largely obscured when a ball is fired.



Figure 83. A 60x magnification of a ball fired in the 1728/41 French musket at 870 f/s that hit the sand backstop. Some slight impact scarring is seen in the upper portion of the image and the fine sand particles impressed on the ball as it struck the backstop.



Figure 84. A 40x magnification of a ball fired from the British 1756 Long Land Pattern musket that passed through the simulated uniform cloth and gelatin blocks. The fabric impressed its weave on the ball providing a textile analyst data for interpretation. The raised circular area on the left of the ball is a sprue from casting the bullet in a mold.



Figure 85. A 20x magnification of a ball fired from the 1763/66 French musket with fabric still adhering to its surface after passing through the simulated uniform cloth and gelatin blocks.

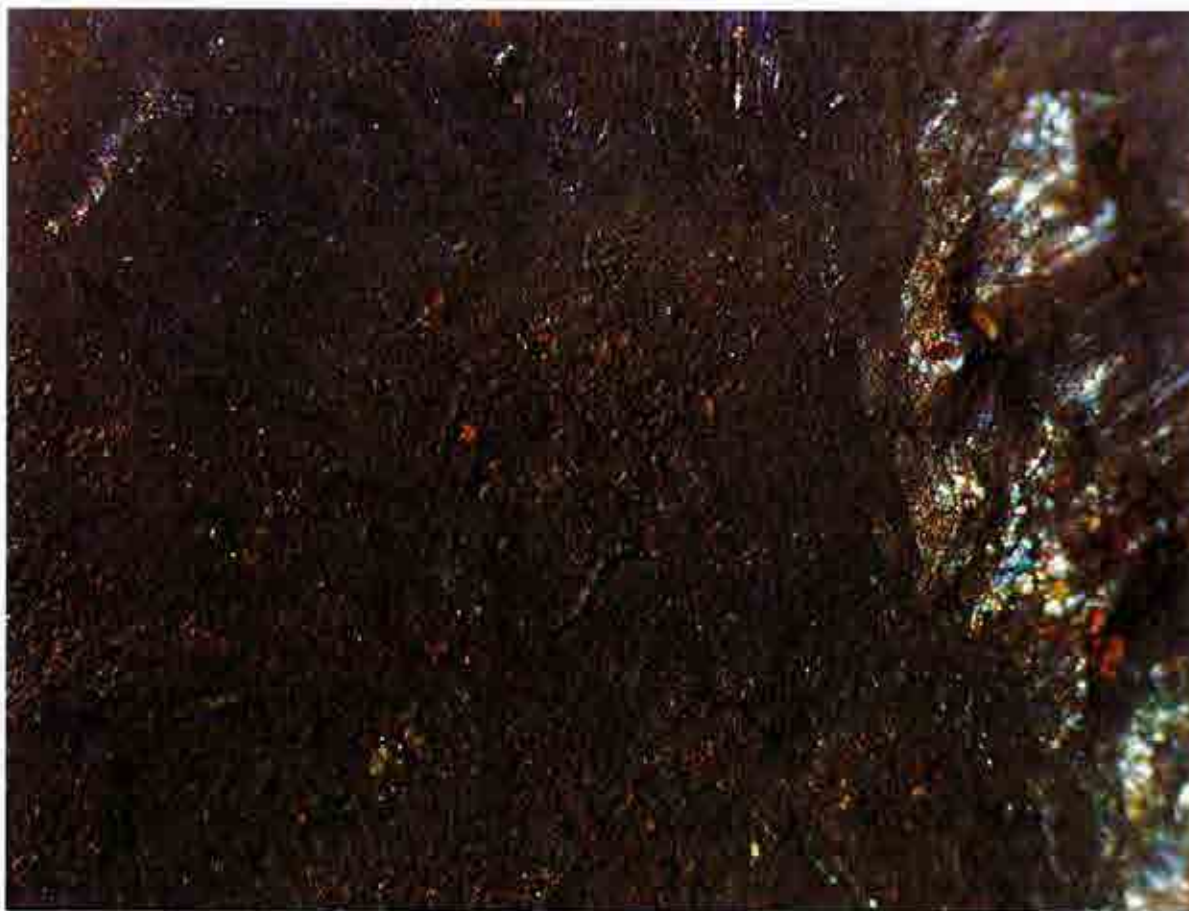


Figure 86. A 75x magnification of a balls surface that shows small fabric threads and impression of soil from passing through the simulated uniform cloth, gelatin blocks, and landing in the soil in front of the target backstop.

Bullets, regardless of form or composition, deform on impact depending on the velocity and the media which it strikes. We observed this on the balls recovered during the live fire experiment, some of which are illustrated here. Balls also embedded in the wood palisade and provided further examples of deformation that couples velocity and media.



Figure 87. A .626 ball embedded $\frac{3}{4}$ inch in a dry loblolly pine post. Note the deformation to the ball is moderate and would fall on the Bullet Deformation Scale as a 2. Pine is a relative soft media which is similar to tissue.



Figure 88. A .580 ball embedded in dry green oak.



Figure 89. The .580 ball removed from the dry green oak. The ball is significantly deformed having hit at a higher velocity into a hard wood media. The bullet deformation is a 3 on the Bullet Deformation Scale.

Ball Deformation and Determination of Original Caliber

The deformed pure or soft lead spherical ball is particularly noted for being difficult to determine its original nominal caliber in archaeological contexts due to impact. Several formulae have been advanced that use the weight of the deformed spherical ball to calculate its approximate original diameter. Arrowood and Berglund (1980) developed one formula that gave a 99.5% level of confidence when at \pm three standard deviations. Daniel Sivilich devised a similar formula (1996; 2009) with only one standard degree of error which has proved quite reliable and replicable. Branstner (2006) attempted to improve the Sivilich formula by recalculating the density of lead and reformulating the Sivilich formula. Branstner devised a table of lead ball diameters based on weights that range from 0.228 inch in diameter to 1.67 inch in diameter. Sivilich (2016:25-27) revised his formula and included new data on lead density to more accurately determine an original caliber, with only one degree of standard error.

We tested the revised Sivilich formula against the recovered fired balls from the live fire experiment. We knew the original ball diameter weight before firing and we weighed the fired balls as well as calculated the fired ball weight loss by caliber and average weight loss for each ball diameter. The weight of the recovered balls was used to test the 2016 Sivilich formula (See Appendix B for a blind study of the known velocity balls and their deformation).

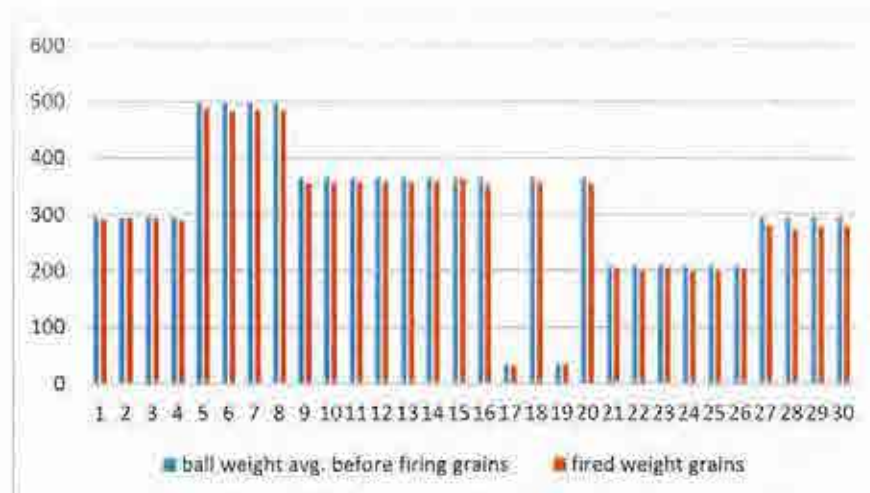


Figure 90. Ball weight before firing compared to weight loss with recovered balls. Note that items 1-4 are .580 balls, 5-8 are .69 balls, 9-16, 18, and 20 are .626 balls, 17 and 19 represent .282 buckshot balls, 21-26 are .520 balls, and 27-30 are .580 balls. The overall average weight loss of fired balls is 2.4%, although this generally increases as velocity increases ranging from 0.4 to 7.5%.

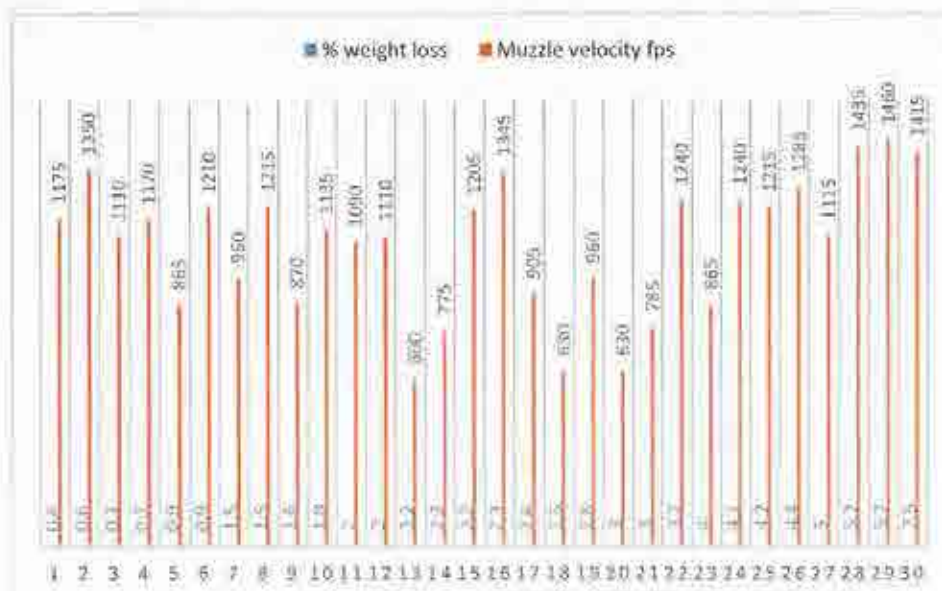


Figure 91. The percent of fired ball weight loss compared to muzzle velocity. The weight loss range is from 0.4 to 7.5%. To some degree the fired ball weight loss is partially dependent on the hardness of the media it struck when the ball's flight terminated.

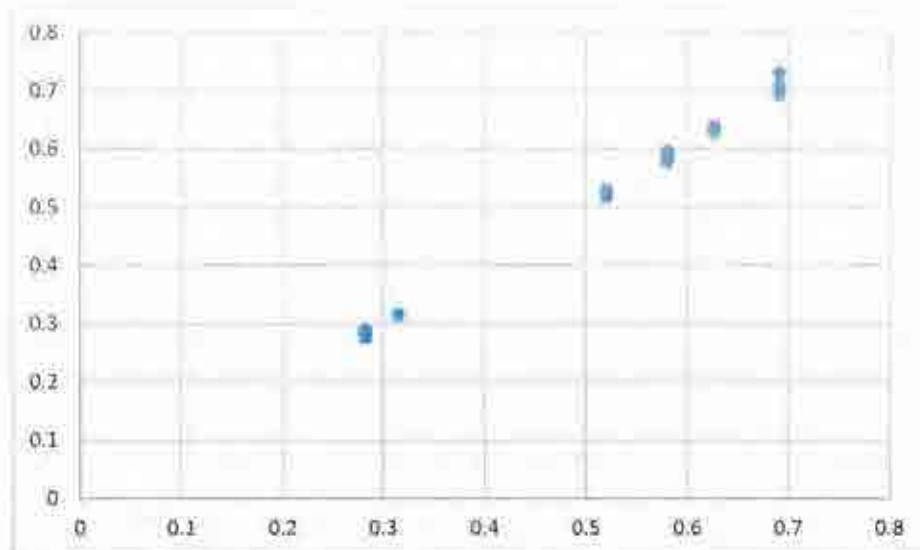


Figure 92. The measured ball diameter compared to the calculated ball diameter using the Sivilich Formula (2016). The differences are well within one standard deviation with an R value of .998.

The revised Sivilich Formula proved exceptionally reliable and accurate. A regression correlation was run comparing the two data sets. Sivilich's Formula tends to overestimate the ball diameter from a few thousandths of an inch to about one-hundredth of an inch. The R value was calculated to be .998 with less than one standard error of deviation. The R value is near ideal and proves the Sivilich Formula to be accurate and reliable for calculating the original ball diameter using weight or mass from recovered archaeological specimens.

Summary and Conclusions

The Colonial firearms live fire experiment can be characterized as an unqualified success. The intent behind the investigation was to determine the external ballistic bullet performance of a series of smoothbore shoulder fired guns of the type commonly used during the American Revolution. The general premise or research design that drove the experimental investigation was to document the fired ball performance in terms of muzzle velocity, penetration capability, and bullet deformation as it terminated its flight. Prior to this controlled experimental work there are only a limited number of controlled shooting studies using Colonial era or replica weapons. This study not only recovered bullets fired at different media; tissue simulant, sand, and wood; it also used high speed videography to determine initial muzzle velocity for each shot. The collected information was analyzed and compared to models of lead sphere external ballistic performance.

Our data exhibits excellent correspondence with ballistic performance models, further validating those models and allowing us to compare our data findings with various data sets. A particularly

valuable finding is that the approximate original caliber of fired and deformed lead balls can be accurately determined using the Sivilich Revised Formula. This validation of the Sivilich Formula is of real value to archaeological investigations.

Our live fire experiments were designed to determine Colonial era musket and fowler bullet performance. Accuracy was not a major component of the study; however, general shot accuracy was noted. The least accurate firearms were the British Long Land pattern muskets. Regardless of range the shots did hit the man-size torso target or were near misses, but had a very wide spread, often exceeding 30 inches. The 1740 Potsdam musket never struck the target at 100 yards. In part this may have been a function of the shooter's experience level, but given the range of shooter experience in the eighteenth century this is not unrealistic. The British Artillery Carbine and the French pattern muskets achieved good target hits at all ranges at about 75% of the shots fired. The Thomas Earle Fowler had an exceptional record for accuracy. Regardless of shooter experience, and nearly every shooter fired the fowler at least once, over 85% of the shots hit the target at all ranges. This led several of the shooters to observe they would rather have been Minute Men or Colonial Militia than British or Hessian troops during the Revolutionary War.

Another valuable lesson derived from the live fire experiments is the validation of bullet deformation and a general correlation with velocity. We present a Lead Bullet Deformation Index that we believe many archaeologist will find useful. The LBDI we present needs additional testing and validation, but we believe that it has utility as an independent ordinal scale to assess impact deformation on conflict sites. The LBDI assessment can be of use in determining possible firing line distances on battlefields which will expand the archaeological interpretative potential of bullet datasets.

The microscopic examination of unfired and fired lead balls revealed changes in the microstructure of the balls' surface that are observable and clear. We have not yet examined the effect of patination on the observability of those surface changes in archaeological samples, but knowing they do and did exist on fresh lead bullets offers another line of investigation and interpretation to determine if a ball has been fired or not.

Much of the work we undertook was designed to aid archaeologists in better understanding of the potential information yields that can be gained from bullet analysis from archaeological sites. We have focused on conflict sites specifically and the role bullet analysis has in yielding information that expands and enhances their interpretive value. An additional intent in conducting the live fire experiments is to provide well controlled and defined data to forensic firearm examiners so they may use the information to identify historic firearm types involved in law enforcement cases either by inclusion or exclusion. We believe the data presented here will aid firearms examiners with case work when it involves shooting incidents with smoothbore muzzle loading black powder firearms.

The goals and objectives of this project were to collect data and conduct live fire experiments with appropriate replica Colonial firearms. The goals also included recording that information and disseminating it to battlefield archaeologists, interpreters, reenactment groups, and others to

enhance various aspects of public interpretation regarding of the effectiveness of selected firearms in combat in the past. Firearms had an enormous impact on the European settlement and conquest of the western hemisphere. We see this report as the first step in creating a wide-ranging data base on effectiveness and external ballistic performance of firearms in general, and in this specific study of Colonial era muskets and fowlers specifically. We also see this report as the first step in creating a data base on bullet performance of firearms that were used in the New World after 1492.

This study demonstrates the need to conduct additional live fire experiments of with a variety weapons and firearms of the types used in the prior to the American Revolution, during the War of 1812, Mexican War, Civil War, and Indian Wars. Live fire experiments with bows and arrows, lances, crossbows, matchlocks and common black powder weapons should be undertaken. Using this or similar data collection models to acquire muzzle and downrange velocities will result in better comparative observations of bullet velocity for a given weapon type as well as ascertaining when the projectile falls below a velocity and kinetic energy threshold that could cause death or a serious wound. Continued controlled live firing of weapons into ballistic gelatin will further assess wounding and lethality effects of various ammunition types in simulated tissue. Firearms functioned as tools throughout their history, evolving in concert with the cultures and technologies in which they were used. Firearms deserve serious study as points of industrial development and evolution and as factors in affecting cultural change across the globe.

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Appendix A

Experiments with 3-D Microscopy in Modeling Bullet Surfaces

A Leica DVM 5000 3-D microscope was used to capture images of some bullet surfaces as an experiment in the applicability of 3-D imaging to bullet analysis. The DVM 5000 microscope complements traditional microscopic inspection and analysis. The microscopic image is displayed directly on a high-resolution monitor and can reach extremely difficult-to-access surfaces. This allows for nondestructive inspection of elements which are difficult to examine using traditional microscope techniques. As an advanced digital microscope, it also offers a variety of quantitative analysis options. Among those are shade relief models of surfaces, colored wire frame models, and calibration functions.

The DVM 5000 has a large array of magnification capabilities. In the case of the lead balls the surface area that could be modeled is limited to a 6 x 6-millimeter area for any given ball tangent. In this experiment balls with fabric impressions were imaged at low magnification to achieve the 6 x 6-millimeter area, then modeled as surfaces to show fabric impressions and impact scarring. Relief models, profiles, and graphic profiles, and wire frame models were collected. The 3-D experiment demonstrates analytical potential, but time constraints prevented detailed comparisons and full analytical capability. More studies are needed to fully explore 3-D modeling potential.



Figure 93. The Leica DVM 5000 3-D microscope setup.

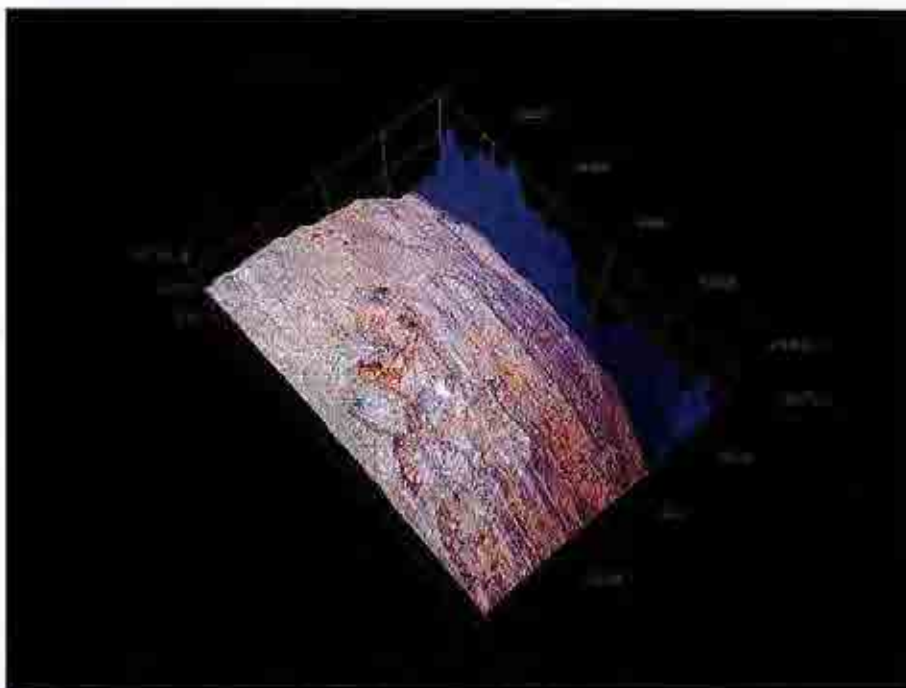


Figure 94. Ball segment, .69-caliber, showing detail of wood impact scarring.

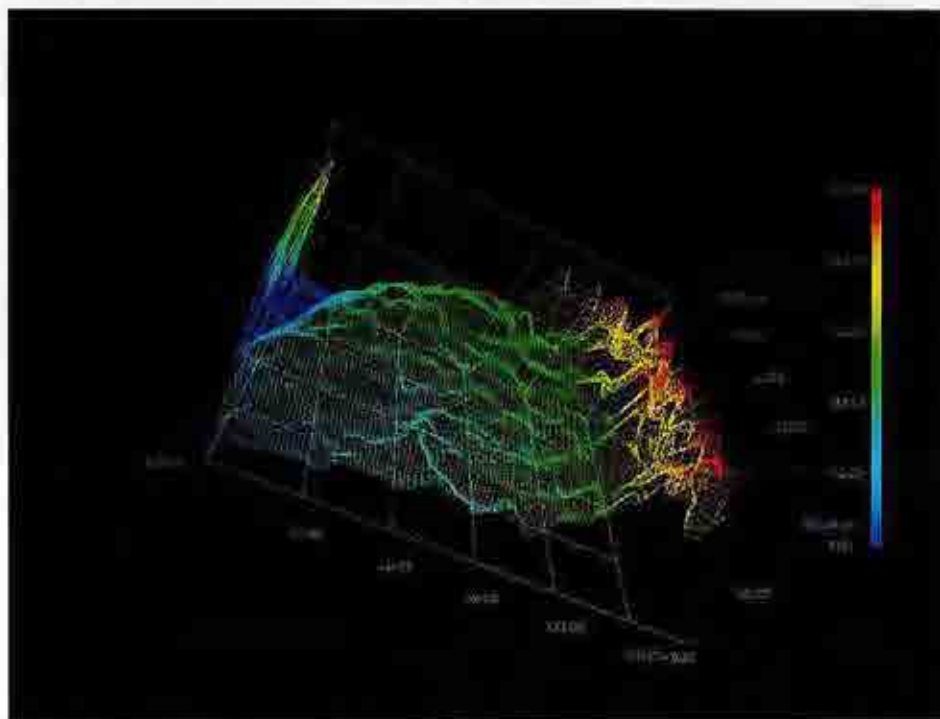


Figure 95. Wire frame model of the ball segment, .69-caliber, showing detail of wood impact scarring.

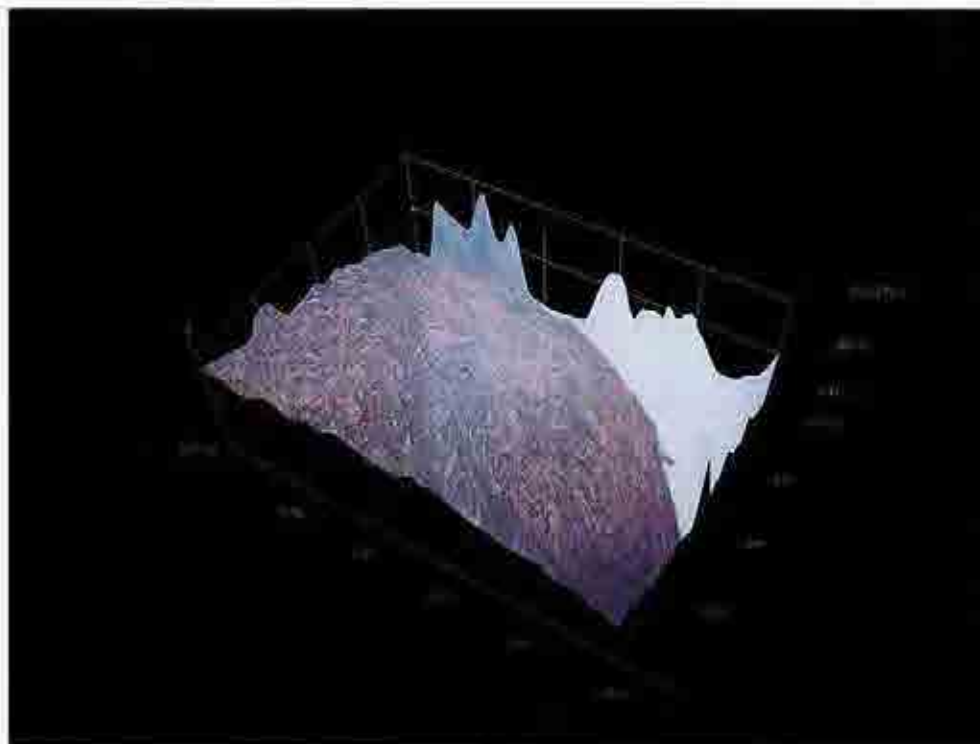


Figure 96. Fabric impressions on a .69-caliber ball segment.

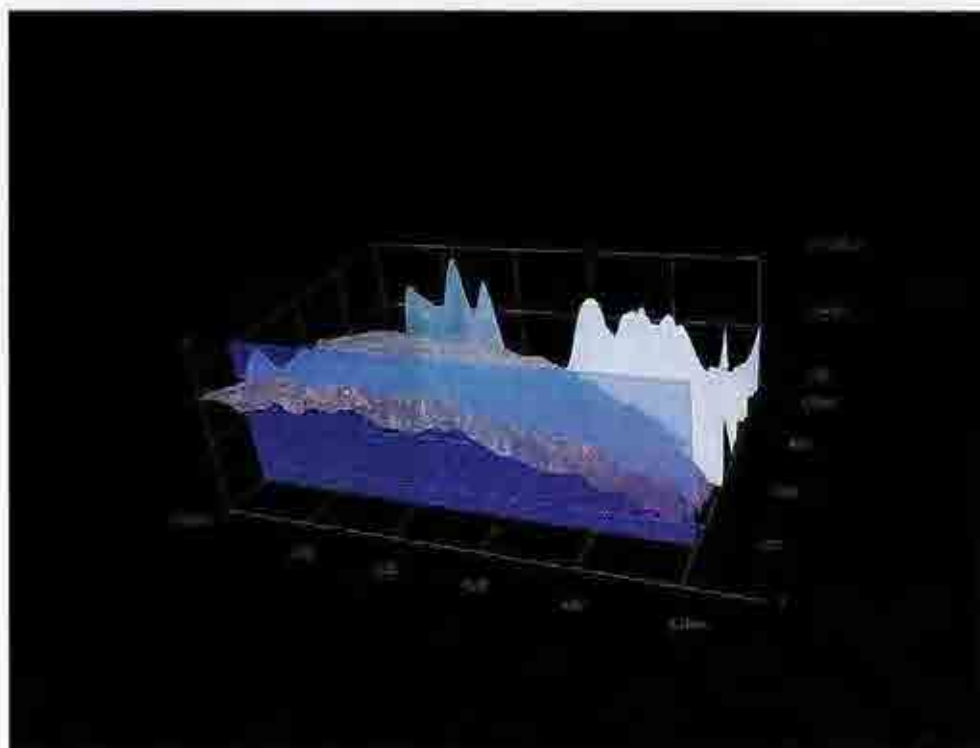


Figure 97. Profile location of the fabric impressions on the same .69-caliber ball.

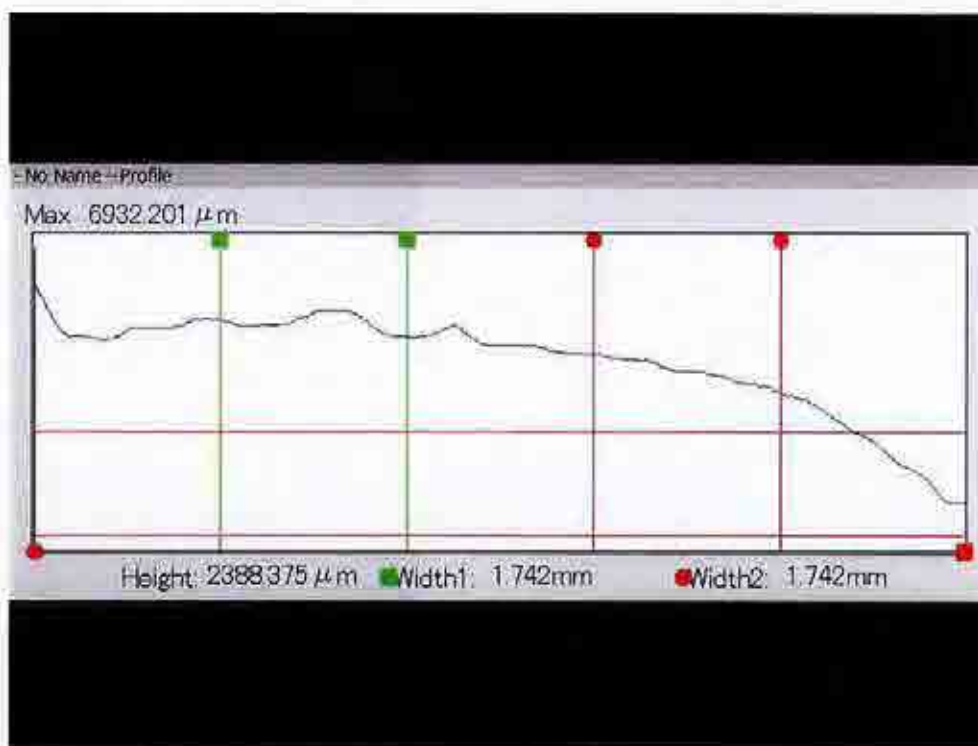


Figure 98. Graphic representation of the profile of the fabric impressions on the .69-caliber ball.

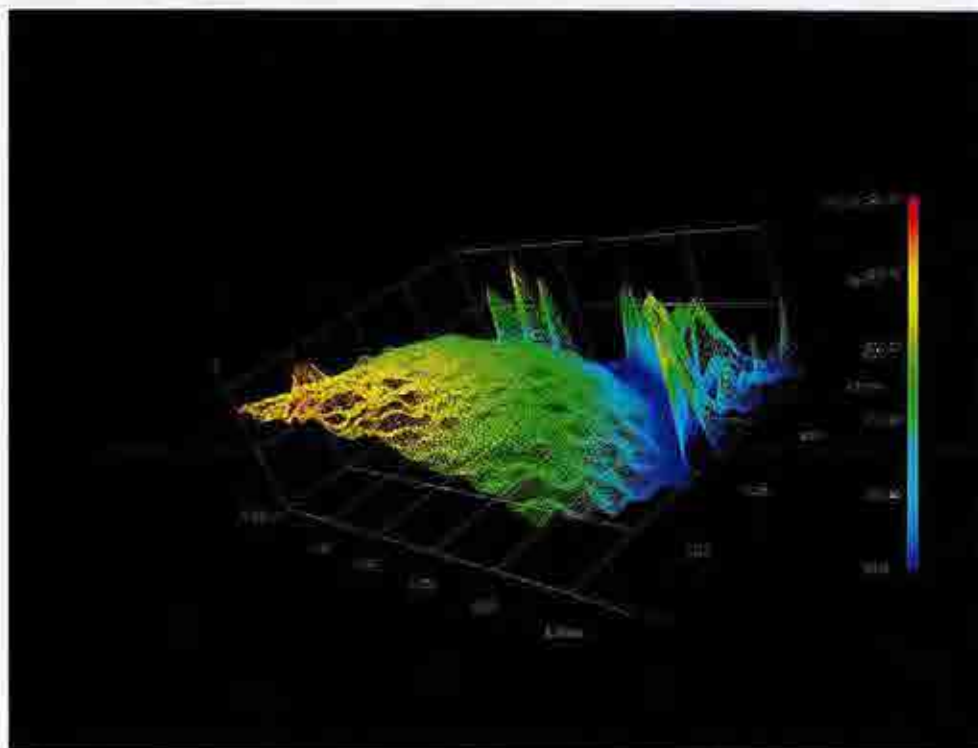


Figure 99. Wire frame model of the fabric impressed .69-caliber ball.

Appendix B, Blind Lead Ball Analysis Study

by Daniel M. Sivilich

One component of the live fire study identified the need to conduct a blind study of the known velocity and deformed lead balls recovered during the shooting event. Daniel Sivilich agreed to undertake the blind study as if the bullets were archaeological artifacts in need of analysis and interpretation. Mr. Sivilich is an acknowledged expert and published author (2016) on American Revolution and Colonial era bullets.

He examined the lead balls (n=31) that were:

1. fired from a known firearm
2. had a known velocity (3 exceptions)
3. have a known recovery location
4. deformation correlated with striking a known media
5. and were recovered immediately after firing by metal detecting


His analysis demonstrated that he correctly identified the bullet type, approximate caliber, and relative deformation at or above 90%. He suggested the submitted bullets were fired from at least four types of firearms based on caliber and bore characteristics engraved on the bullet during firing. In this he is essentially correct. He identified British Brown Bess caliber firearms, French caliber firearms, and two smaller bore type firearms. In fact, the live fire experiment fired seven different firearms. These can be grouped into two British Brown Bess caliber guns, two French caliber guns, and three other smaller bore firearms. These smaller bore firearms, Thomas Earle Fowler, British Artillery Carbine, and 1740 Potsdam musket used similar sized lead balls as projectiles, and do fall into two groups based on ball caliber. While the blind study could not, as expected, identify a ball as fired from a specific smoothbore musket, carbine, or fowler, the ball diameters used in the live fire experiments do fall into four distinct groups.

Mr. Sivilich's analytical techniques are those commonly used by archaeologists who analyze and interpret lead projectiles recovered in Colonial and post-Colonial sites in the United States, as well as internationally. The blind study validates the commonly employed analytical techniques and interpretations used in the study of dropped and expended ordnance from archaeological contexts.

The table shows Mr. Sivilich's blind analysis. We have inserted in the first four columns information on the actual firearm, actual ball diameter, actual velocity, and actual range of the ball recovery for comparison purposes.

LIVE FIRE MUSKET BALL EXPERIMENT - ANALYSIS BY DAN SIVILICH													
Actual gun	Actual ball dia.	Known Vel. ft/s	Recovered at Range Yds.	Study No.	Weight	Calc. Dia (in)	Caliber	Height (in)	% Compression	Fabric	Guessed Velocity at Impact	Guessed Distance (yd)	
													#1 Buck
French 1766 musket - buckshot	0.282	1110	94	18A	2.0	0.2807	28						#1 Buck
French 1766 musket - buckshot	0.282	866	94	17A	2.2	0.2898	29						#1 Buck
RIFLE or SMALL BORE 1													
T. Earle Fowler - .58	0.52	1240	94	24	12.9	0.5225	52	0.504	3.5%		M	50-75	Hard target, deep scrape marks radiating out from center of impact.
T. Earle Fowler - .58	0.52	1350	94	20	13.2	0.5266	53	0.485	7.9%		M	50-75	Possibly hit hard wood or particle board, deep scrape marks radiating out from center of impact. Possible wood fragments (not very fibrous) on impact side.
T. Earle Fowler - .58	0.52	1345	94	22	13.2	0.5266	53	0.483	12.1%		M	50-75	Hit wood. Fibrous wood on impact side.
T. Earle Fowler - .58	0.52	1215	94	23	12.9	0.5225	52	0.410	21.5%		H	25-50	Deep scrape marks, probably ricochet off a rock then hit hard dirt. Small small imbedded quartz crystals.
T. Earle Fowler - .58	0.52	1285	94	21	13.0	0.5239	52	0.381	27.3%		H	25-50	Badly scraped. Possibly hit a rock or hard target then dirt. Lead folded back on non impact side.
T. Earle Fowler - .58	0.52	1240	94	25	13.0	0.5239	52	0.318	39.3%		H	25-50	Very flattened, lead slight rolled back on non impact side. Hit semi-hard target such as dry wood or hard dirt
RIFLE or SMALL BORE 2													
British Artillery Carbine - .68	0.58	1210	94	3	18.8	0.5924	59	0.563	5.0%		H	25-50	Possibly hit hard wood, deep scrape marks radiating out from center of impact. Small wood particle fragments on impact side.
T. Earle Fowler - .58	0.58	1155	25, captured in gel	31	18.1	0.5850	58	0.532	8.1%	Y	H	25-50	Fabric on impact side. Fired at target covered in fabric - fine weave impression.
British Artillery Carbine - .68	0.58	960	94	1	18.8	0.5924	59	0.475	19.8%		H	75-100	Ramrod mark. Hard target and/or clay/sand
T. Earle Fowler - .58	0.58	no velocity data	94	26	18.0	0.5839	58	0.464	20.5%		H	50-75	Hard target, slight ricochet, sandy loam.
British Artillery Carbine - .68	0.58	1135	94	4	18.7	0.5914	58	0.453	23.4%		H	50-75	Hard target and/or clay/sand.
British Artillery Carbine - .68	0.58	1170	94	2	19.0	0.5945	59	0.425	28.5%		H	50-75	Hard target - slight ricochet off semi-hard target such as wood or tree then hit dirt.
T. Earle Fowler - .58	0.58	1460	94	30	18.0	0.5939	58	0.362	38.0%		H	25-50	Very flattened, hard dirt/compacted sand. Ricocheted off a sand bag?
T. Earle Fowler - .58	0.58	1435	94	28	19.1	0.5950	59	0.362	38.1%		H	25-50	Very flattened, hard dirt/compacted sand. Fired through a sand bag?
T. Earle Fowler - .58	0.58	1415	94	29	17.7	0.5906	58	0.325	44.0%		H	25-50	Hard target, deep scrapes radiating out from impact point. Lead rolled back, possible lead loss. Wood fibers trapped under rolled lead lip.
T. Earle Fowler - .58	0.58	no velocity data	94	27	18.0	0.5839	58	0.301	48.5%		H	25-50	Very flattened, hard dirt/compacted sand. Fired through a sand bag?

1 of 2

FRENCH 1756 MUXET - 68	0.626	775	94	12	SMOOTH BORE 1 - POSSIBLE CHADSVILLE			1.0%	75-100	Possible rimmed mark. Hg det.
					23.2	0.634	64			
FRENCH 1756 MUXET - 68	0.26	1090	94	13	23.1	0.6345	65	0.620	2.3%	Attn: Fibrous wood fragments on impact side. Concave indentation with scrape marks. Possible knockout of a large pebble.
FRENCH 1756 MUXET - 68	0.626	960	94	10	23.0	0.6336	65	0.612	3.4%	Wood fragments on impact side. Looks like a bit of wood.
FRENCH 1756 MUXET - 68	0.626	785 in g/c	28 captured	13	22.9	0.6327	65	0.599	5.3%	Recessed soft target (ballistic gel) or dirt.
FRENCH 1756 MUXET - 68	0.626	1110	94	18	22.7	0.6308	65	0.585	5.7%	Possible rimmed mark.
FRENCH 1756 MUXET - 70-71	0.626	905	94	11	23.1	0.6345	65	0.606	7.6%	Blind bore. Hg det. Ball and stick.
FRENCH 1756 MUXET - 68	0.626	865	94	17	23.1	0.6345	65	0.597	15.4%	Hit hard dirt. Concave indentation with scrape marks. Possible knockout of a large pebble.
FRENCH 1756 MUXET - 68	0.626	NO velocity	94	32	22.9	0.6290	65	0.523	16.3%	Hit hard dirt. Indented micro crystalline quartz. Concave depression with no scrape marks. Possible rimmed mark. Ball and stick.
FRENCH 1756 MUXET - 68	0.626	1215	94	18	23.2	0.6364	64	0.516	16.2%	Hit a tree or wood - much wood fiber visible on ball.
FRENCH 1756 MUXET - 68	0.626	1170	94	18	23.5	0.6352	64	0.513	19.5%	Soft knockout. Hit hard dirt. Concave indentation with scrape marks. Possible knockout of a large pebble.
FRENCH 1756 MUXET - 68	0.626	1205	94	14	23.1	0.6345	65	0.499	21.4%	Hard target and/or clayband. Rebound. Paint cut line across non impact hemisphere.
SMOOTH BORE 2 - POSSIBLE BROWN BELLS										
British 1756 Long Land Muxet - 76	0.69	830 in g/c	25 captured	9	31.3	0.7022	70	0.664	5.4%	Recessed soft target or dirt.
British 1756 Long Land Muxet - 76	0.69	600	94	9	31.5	0.7036	70	0.651	7.5%	Recessed light scrapes radiating out from impact point. Hard target and/or clayband.
British 1756 Long Land Muxet - 76	0.69	870	94	5	31.7	0.7051	71	0.619	12.2%	Hard target and/or clayband.
British 1756 Long Land Muxet - 76	0.69	1240	25	7	31.2	0.7014	70	0.591	15.7%	Hard target. Concave depression with rough cross hatch pattern, deep scrape marks radiating out from depression.
British 1756 Long Land Muxet - 76	0.69	NO velocity	94	6	32.0	0.7073	71	0.577	18.4%	Concave depression and 0.659 (approx) diameter wire impression on impact side. What particles suggest this is a piece of wood.
Diameter calculated with Bivallach Formula										
"Caliber" is the calculated diameter * 100 and rounded up to a whole number										
										

Appendix C

Elemental Analysis of Modern Lead Shot

By Daniel T. Elliott, The LAMAR Institute, Savannah, Georgia 2017

Elemental analysis is a useful approach for the archaeological study of early ammunition. The present study examined modern examples of round lead balls, similar to those used in the ballistics study.

A sample of seven modern lead shot were analyzed. These shot measured .28, .31, .51, .58, .62, .66 and .67 calibers. This analysis was conducted at the Elliott's Archaeology Laboratory in Rincon, Georgia. Each sample was measured for 180 seconds using a Bruker Tracer. The methods employed were identical to those currently being used to analyze archaeological examples, following the advice of Bruce Kaiser. The composite spectrograms of these seven samples is shown in Figure 1. Results for individual samples are shown in Tables 2-8.

Figure 2 shows an enlargement of the composite spectrogram for the elements Cadmium, Tin and Antimony. Each of these elements is present in low quantities, but they are present. Previous study of archaeological examples from 18th century collections indicate that Tin and Antimony are sensitive indicators of possible cultural significance. The interpretation of these indications are currently under consideration by researchers.

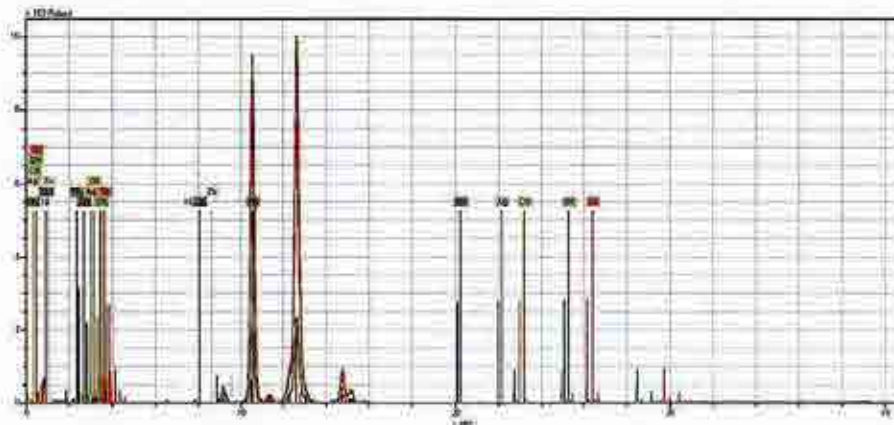


Figure 1. Composite of Seven Spectrograms.

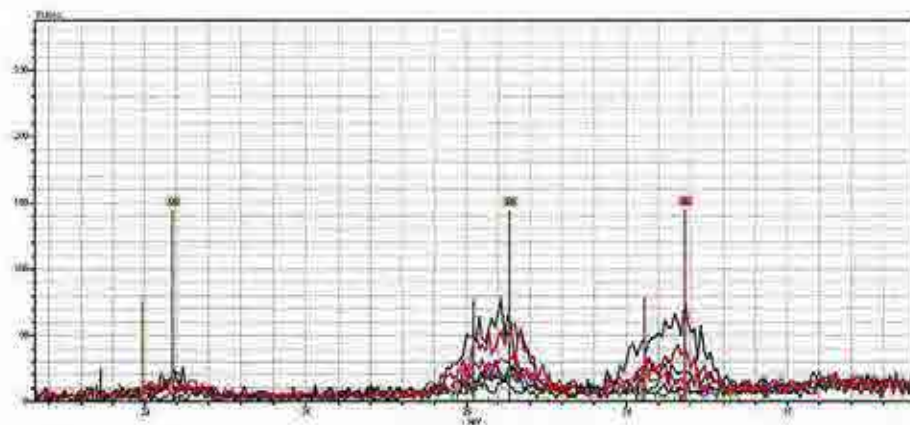


Figure 2. Enlargement of Composite Spectrograms, Showing Elements Cadmium, Tin and Antimony.

Table 1. Photon Energies from Seven Modern Balls.

Sample	Ag K12	Ag L1	Cd K12	Cd L1	Cu K12	Ni K12	Pb L1	Pb M1	Rb K12	Rh K12	Rh L1	Sb K12	Sb L1	Sn K12	Sn L1	Zn K12	Zr K12
28 cal	100	1	144	0	189	112	85542	788	108	75	6	483	64	927	3	2	249
31 cal	79	19	30	0	117	50	27076	228	1	30	0	5	14	121	9	9	89
51 cal	90	1	164	-5	249	116	105003	913	88	107	0	212	67	554	-4	21	351
58 cal	70	10	143	0	186	61	93385	722	102	38	0	26	26	262	18	26	298
62 cal	66	1	179	0	357	104	102789	871	1	23	0	1085	42	1106	35	53	268
66 cal	60	20	203	0	308	94	109591	961	235	15	0	276	41	318	25	0	328
69 cal	82	21	265	0	327	92	116861	970	140	84	0	93	40	307	2	59	358



ARTAX - ELEMENT ANALYSIS

Listed at 4/12/2017 5:47:25 PM

Serial number:	Project:
Spectrum: Bohy1@070417_122539	Meas.date: 4/7/2017 10:15:19 AM
Method: Lead2 (Bayes)	Live time: 162 s
Count rate: 2145 cps	Dead time: 0.1 %
Voltage: 45 kV	Current: 20 µA
Anode:	Filter: Ti/Al
Optic:	Atmosphere: Air

Element	Line	Sigma/	Net area	Backgr.
Mn	K12	0.00	53	176
Fe	K12	0.00	154	191
Co	K12	0.00	52	224
Ni	K12	0.00	92	253
Cu	K12	0.00	327	269
Zn	K12	0.00	59	261
Ga	K12	0.00	768	436
Rb	K12	0.00	140	1494
Sr	K12	0.00	169	530
Y	K12	0.00	2234	1051
Zr	K12	0.00	358	400
Rh	K12	0.00	84	41
Rh	L1	0.00		397
Ag	K12	0.00	82	95
Ag	L1	0.00	21	349
Cd	K12	0.00	265	126
Cd	L1	0.00		321
Sn	K12	0.00	307	225
Sn	L1	0.00	2	267
Sb	K12	0.00	93	294
Sb	L1	0.00	40	263
Pb	L1	0.00	116861	1344
Pb	M1	0.00	970	454



ARTAX - ELEMENT ANALYSIS

Listed at 4/12/2017 5:47:43 PM

Serial number:	Project:
Spectrum: Bohy2-001@070417_122539	Meas.date: 4/7/2017 10:23:09 AM
Method: Lead2 (Bayes)	Live time: 163 s
Count rate: 2042 cps	Dead time: 0.1 %
Voltage: 45 kV	Current: 20 µA
Anode:	Filter: Ti/Al
Optic:	Atmosphere: Air

Element	Line	Sigma/	Net area	Backgr.
Mn	K12	0.00	20	192
Fe	K12	0.00	117	178
Co	K12	0.00	12	207
Ni	K12	0.00	94	260
Cu	K12	0.00	308	292
Zn	K12	0.00		289
Ga	K12	0.00	676	457
Rb	K12	0.00	235	1416
Sr	K12	0.00	148	527
Y	K12	0.00	1911	994
Zr	K12	0.00	328	378
Rh	K12	0.00	15	65
Rh	L1	0.00		353
Ag	K12	0.00	60	128
Ag	L1	0.00	20	295
Cd	K12	0.00	203	156
Cd	L1	0.00		271
Sn	K12	0.00	318	309
Sn	L1	0.00	25	267
Sb	K12	0.00	276	407
Sb	L1	0.00	41	285
Pb	L1	0.00	109591	1233
Pb	M1	0.00	961	420



ARTAX - ELEMENT ANALYSIS

Listed at 4/12/2017 5:47:58 PM

Serial number:	Project:
Spectrum: Bohy3@070417_122539	Meas.date: 4/7/2017 10:30:38 AM
Method: Lead2 (Bayes)	Live time: 163 s
Count rate: 1949 cps	Dead time: 0.1 %
Voltage: 45 kV	Current: 20 µA
Anode:	Filter: TiAl
Optic:	Atmosphere: Air

Element	Line	Sigma/	Net area	Backgr.
Mn	K12	0.00	76	155
Fe	K12	0.00	173	169
Co	K12	0.00	14	198
Ni	K12	0.00	104	237
Cu	K12	0.00	357	282
Zn	K12	0.00	53	250
Ga	K12	0.00	562	377
Rb	K12	0.00	1	1327
Sr	K12	0.00	139	482
Y	K12	0.00	1817	975
Zr	K12	0.00	268	394
Rh	K12	0.00	23	56
Rh	L1	0.00		376
Ag	K12	0.00	66	121
Ag	L1	0.00	1	329
Cd	K12	0.00	179	168
Cd	L1	0.00		304
Sn	K12	0.00	1106	364
Sn	L1	0.00	35	284
Sb	K12	0.00	1085	426
Sb	L1	0.00	42	298
Pb	L1	0.00	102789	1191
Pb	M1	0.00	871	433



ARTAX - ELEMENT ANALYSIS

Listed at 4/12/2017 5:48:11 PM

Serial number:

Project:

Spectrum: Bohy4@070417_122539

Meas.date: 4/7/2017 10:35:36 AM

Method: Lead2 (Bayes)

Live time: 165 s

Count rate: 1727 cps

Dead time: 0.1 %

Voltage: 45 kV

Current: 20 μ A

Anode:

Filter: Ti/Al

Optic:

Atmosphere: Air

Element	Line	Sigma/	Net area	Backgr.
Mn	K12	0.00	53	143
Fe	K12	0.00	135	160
Co	K12	0.00	1	168
Ni	K12	0.00	61	237
Cu	K12	0.00	186	273
Zn	K12	0.00	26	277
Ga	K12	0.00	679	400
Rb	K12	0.00	102	1120
Sr	K12	0.00	121	429
Y	K12	0.00	1591	913
Zr	K12	0.00	298	341
Rh	K12	0.00	38	41
Rh	L1	0.00		328
Ag	K12	0.00	70	94
Ag	L1	0.00	10	293
Cd	K12	0.00	143	128
Cd	L1	0.00		270
Sn	K12	0.00	262	212
Sn	L1	0.00	18	249
Sb	K12	0.00	26	307
Sb	L1	0.00	26	258
Pb	L1	0.00	93385	1043
Pb	M1	0.00	722	388



ARTAX - ELEMENT ANALYSIS

Listed at 4/12/2017 5:48:35 PM

Serial number:	Project:
Spectrum: Bohy5@070417_122539	Meas.date: 4/7/2017 10:39:44 AM
Method: Lead2 (Bayes)	Live time: 164 s
Count rate: 1906 cps	Dead time: 0.1 %
Voltage: 45 kV	Current: 20 µA
Anode:	Filter: TiAl
Optic:	Atmosphere: Air

Element	Line	Sigma/	Net area	Backgr.
Mn	K12	0.00	86	162
Fe	K12	0.00	112	160
Co	K12	0.00	53	175
Ni	K12	0.00	116	203
Cu	K12	0.00	249	262
Zn	K12	0.00	21	297
Ga	K12	0.00	783	448
Rb	K12	0.00	88	1287
Sr	K12	0.00	125	463
Y	K12	0.00	1790	979
Zr	K12	0.00	351	384
Rh	K12	0.00	107	21
Rh	L1	0.00		377
Ag	K12	0.00	90	104
Ag	L1	0.00	1	330
Cd	K12	0.00	164	149
Cd	L1	0.00		307
Sn	K12	0.00	554	230
Sn	L1	0.00		264
Sb	K12	0.00	212	307
Sb	L1	0.00	87	288
Pb	L1	0.00	105003	1153
Pb	M1	0.00	913	421



ARTAX - ELEMENT ANALYSIS

Listed at 4/12/2017 5:48:57 PM

Serial number:

Project:

Spectrum: Bohy6@070417_122539

Meas.date: 4/7/2017 10:45:55 AM

Method: Lead2 (Bayes)

Live time: 175 s

Count rate: 562 cps

Dead time: 0.0 %

Voltage: 45 kV

Current: 20 µA

Anode:

Filter: TlAl

Optic:

Atmosphere: Air

Element	Line	Signal	Net area	Backgr.
Mn	K12	0.00	43	68
Fe	K12	0.00	54	58
Co	K12	0.00	16	66
Ni	K12	0.00	50	79
Cu	K12	0.00	117	92
Zn	K12	0.00	9	92
Ga	K12	0.00	182	117
Rb	K12	0.00	1	377
Sr	K12	0.00	51	133
Y	K12	0.00	554	255
Zr	K12	0.00	89	114
Rh	K12	0.00	30	23
Rh	L1	0.00		232
Ag	K12	0.00	79	68
Ag	L1	0.00	19	219
Cd	K12	0.00	30	82
Cd	L1	0.00		207
Sn	K12	0.00	121	183
Sn	L1	0.00	9	181
Sb	K12	0.00	5	268
Sb	L1	0.00	14	182
Pb	L1	0.00	27076	331
Pb	M1	0.00	228	280



ARTAX - ELEMENT ANALYSIS

Listed at 4/12/2017 5:44:54 PM

Serial number:	Project:
Spectrum: Bohy7@070417_122539	Meas.date: 4/7/2017 10:58:39 AM
Method: Lead2 (Bayes)	Live time: 166 s
Count rate: 1580 cps	Dead time: 0.1 %
Voltage: 45 kV	Current: 20 µA
Anode:	Filter: Ti/Al
Optic:	Atmosphere: Air

Element	Line	Sigma/	Net area	Backgr.
Mn	K12	0.00	61	145
Fe	K12	0.00	72	138
Co	K12	0.00	29	134
Ni	K12	0.00	112	168
Cu	K12	0.00	189	229
Zn	K12	0.00	2	255
Ga	K12	0.00	585	350
Rb	K12	0.00	108	1079
Sr	K12	0.00	155	351
Y	K12	0.00	1428	764
Zr	K12	0.00	249	314
Rh	K12	0.00	75	36
Rh	L1	0.00	6	316
Ag	K12	0.00	100	74
Ag	L1	0.00	1	264
Cd	K12	0.00	144	118
Cd	L1	0.00		253
Sn	K12	0.00	927	284
Sn	L1	0.00	3	242
Sb	K12	0.00	483	386
Sb	L1	0.00	64	248
Pb	L1	0.00	85542	947
Pb	M1	0.00	788	392

EXHIBIT 3



SHOOTING THE PAST: COLONIAL & REVOLUTIONARY WAR FIREARM LIVE FIRE EXPERIMENTS & SPHERICAL BALL PERFORMANCE.

By Joel Bohy

During the Parker's Revenge Archaeology Project at Minute Man National Historical Park in 2016, archaeologist Dr. Douglas Scott, well known for his work at The Little Big Horn and other historic battlefields, mentioned how we were finding great examples of fired Provincial and British ball to put the historical study in context, but wouldn't it be great to do a live fire study of flintlock firearms used during the Revolutionary War to really expand our knowledge of how these guns actually functioned and try to acquire data that might not only help conflict archaeologists, but also those who study and own the original flintlock firearms? I also felt that it could broaden our understanding of important historic events and how they transpired, fifteen years previous, I had begun collecting custom-built examples of these firearms to shoot live. We then had the tools to make the study happen. Since this was self-funded, we needed to raise some money. The Modern Heritage Foundation gave us a grant which enabled us to hire a

ballistics specialist, Nathan Boor from Aimed Research. He would bring hi-speed cameras and the computer equipment necessary for us to capture the scientific data. The rest of the study would be paid for by us.

Prior to our testing we studied original paper cartridges to get the correct range of laid paper weights for our loads. We also found the correct weight linen cord to tie them off. Ball in a variety of calibers was purchased (Figure 1), ballistics gelatin, as well as making up cloth samples to simulate civilian and military clothing of the period was obtained. The cloth used was custom reproduced in England to 18th century specifications, as were the linings and Irish linen for the shirting. As propellant, we studied a variety of available modern black powder and decided that Swiss brand in FF grain size would be our standard. A range safety officer was designated and dates were set.

In November 2016, we met at a private property just south of Atlanta, Georgia, to commence the study. For the first phase of the project, we had a target setup at 100 yards (although determining accuracy was not our initial goal) for an aiming point, and the camera equipment was setup to capture muzzle velocity. A wooden palisade made from a variety of wood species was built as a backstop as well as a dirt berm. We narrowed down the analysis to seven guns, a British Royal Artillery carbine, British Pattern 1742 and 1756 long land, a French Pattern 1728/41 musket, a French Pattern 1768 musket, a Potsdam Model 1740 musket, and a Thomas Earle Worcester County-style fowler (Figure 2). The two British long land pattern muskets were a bit redundant as the shape of the lock and stock would not make a difference in ballistics but we were having some issues with the 1756. After firing each round, the range was cleared and a recovery team metal detected to find the fired ball, which was then bagged, numbered, and recorded for later study.



Figure 1. Cast lead balls, .282, .315, .520, .580, .626, .662, and .69 caliber.



Figure 2. Bill Rose and Dr. Douglas Scott reviewing the bore diameters before loading.

The second phase of the study was to fire into ballistics gelatin at 25 yards with cloth samples of a variety of types on the face, collect the ball, and see what data that could give (Figure 3). Previously on Revolutionary War conflict archaeology sites, ball had been found with a cloth imprint that some believed was from patching. The deformation of that ball was on the face where they struck the target and under magnification, powder burn and stippling could be seen on the opposite side of the ball which meant that there had been no patch behind it so the cloth weave on the struck face of the

ball had to have come from initially hitting a cloth target. This was also tested by not using a paper cartridge and using a cloth patch when firing the ball. The results of the cloth patch while shooting into the gelatin showed plain woven broadcloth on the struck face as well as some light deformation (Figure 4), no patch weave and no powder burn/stippling on the back as the patch had taken the brunt of the powder ignition. Either way we fired, the weave of the cloth that was initially struck by the ball was clearly visible and when fired at a finer woven cloth, the difference in weave was clearly visible. This meant that the type of cloth the ball struck could be determined by the imprint on the ball.

We also learned some data about accuracy, although again, that was not the initial goal of the study. The Worcester County-style fowler was the first gun fired. We did ten shots per gun but switched shooters after five rounds. The fowler was determined to be the most accurate weapon of the group. At 100 yards every shot hit the target. It also had the highest muzzle velocity of them all averaging at about 1300 f/s. The Potsdam Pattern 1740 was the worst with very few ball recoveries and an average muzzle velocity of 700 f/s.

While we covered more ground with this study than expected there are many more questions to be answered with live fire of historic arms. This past November, we continued with another week of study that gave us some new and important data on flint-lock firearms as well as some percussion. Hopefully this will be published in the near future.



Figure 3. Bill Rose firing the Thomas Earle fowler at cloth-covered ballistics gelatin.

So why was this study important? We were able to use the data from the recovered ball to form a deformation index for use by conflict archaeologists. They can use the index to come up with a likely muzzle velocity as well as the distance from the muzzle of the gun that fired the ball. At the Fields of Conflict Archaeology Conference this past fall, I saw many papers and posters that had used our work to help tell the story of the battles they had been studying. Soon after we completed the first week of work, we were asked by the National Park Service Northeast Region Archaeology Program to volunteer on a metallic survey of sample areas at Little Round Top in Gettysburg prior to a controlled vegetation removal burn they were going to do. While surveying an area where a temporary mass grave had been, we recovered a few interesting balls. Two had been chewed out of bodies by hogs, but one had a cloth imprint on it that we could match up based upon the ballistics study to a twill woven cloth, possibly a fatigue blouse or kersey trousers. This makes all of the time and expense worthwhile to see



Figure 4. Ball with a plain woven cloth imprint retrieved from the ballistics gelatin.

our study used in this manner and hopefully our future firearms studies will yield other data that might prove invaluable to archaeologists, historians, and gun collectors alike.

To learn more about this study see the following report on the project.

Scott, D.D., Bohy, J., Boor, N., Haecker, C., Rose, W. Severts, P. 2017. Colonial era firearm bullet performance: a live fire experimental study for archaeological interpretation. Found at:

<http://modernheritage.net/research.html>

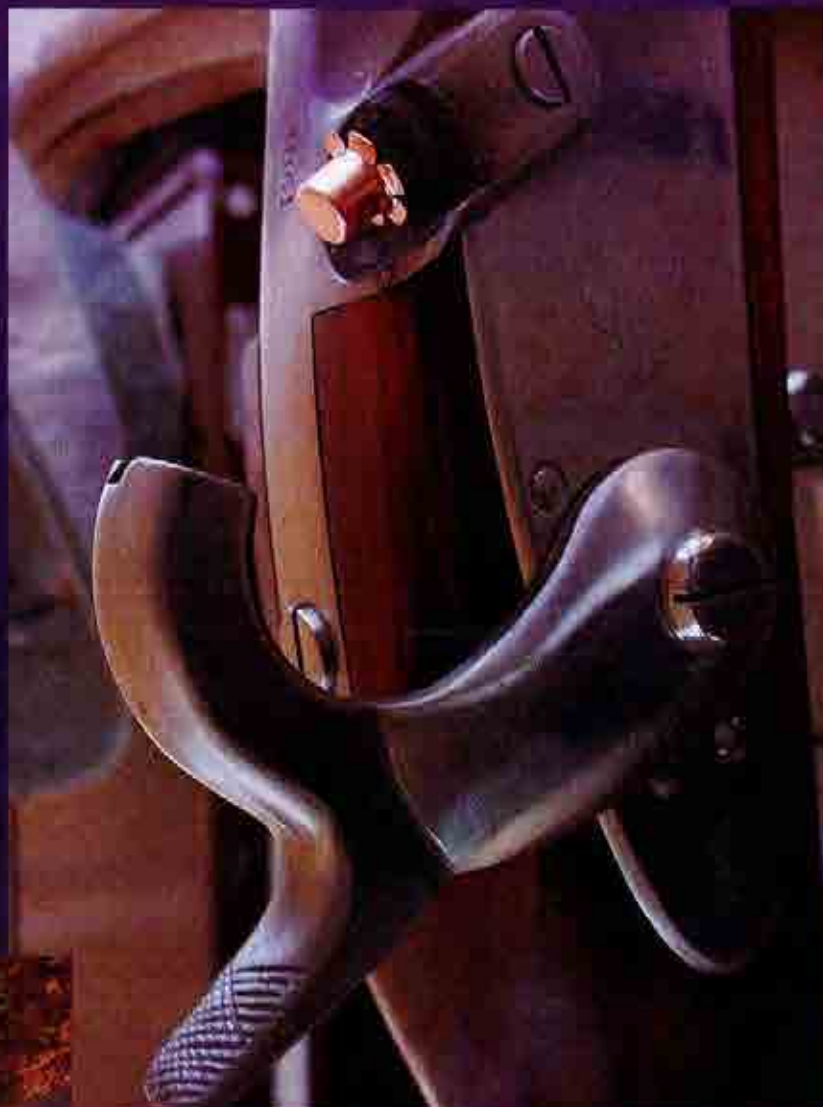


What Happens When a Gun Goes Off: Flintlock, Percussion Cap, and Metallic Cartridge Blackpowder Weapons

Douglas Scott, PhD, RPA, Colorado Mesa University;
AFTE Technical Advisor
Contact: ddscott@coloradomesa.edu



Flintlock – Colonial Fowler



Percussion Cap – Civil War Rifled Musket, Courtesy Luke Haag, FSSI.

Flintlock Ignition System: Loading and Live Fire Examples

Colonial Flintlocks – modern reproductions of
common Revolutionary War guns.



Cast lead balls, .282, .315, .520, .580,
.626, .662, and .69.



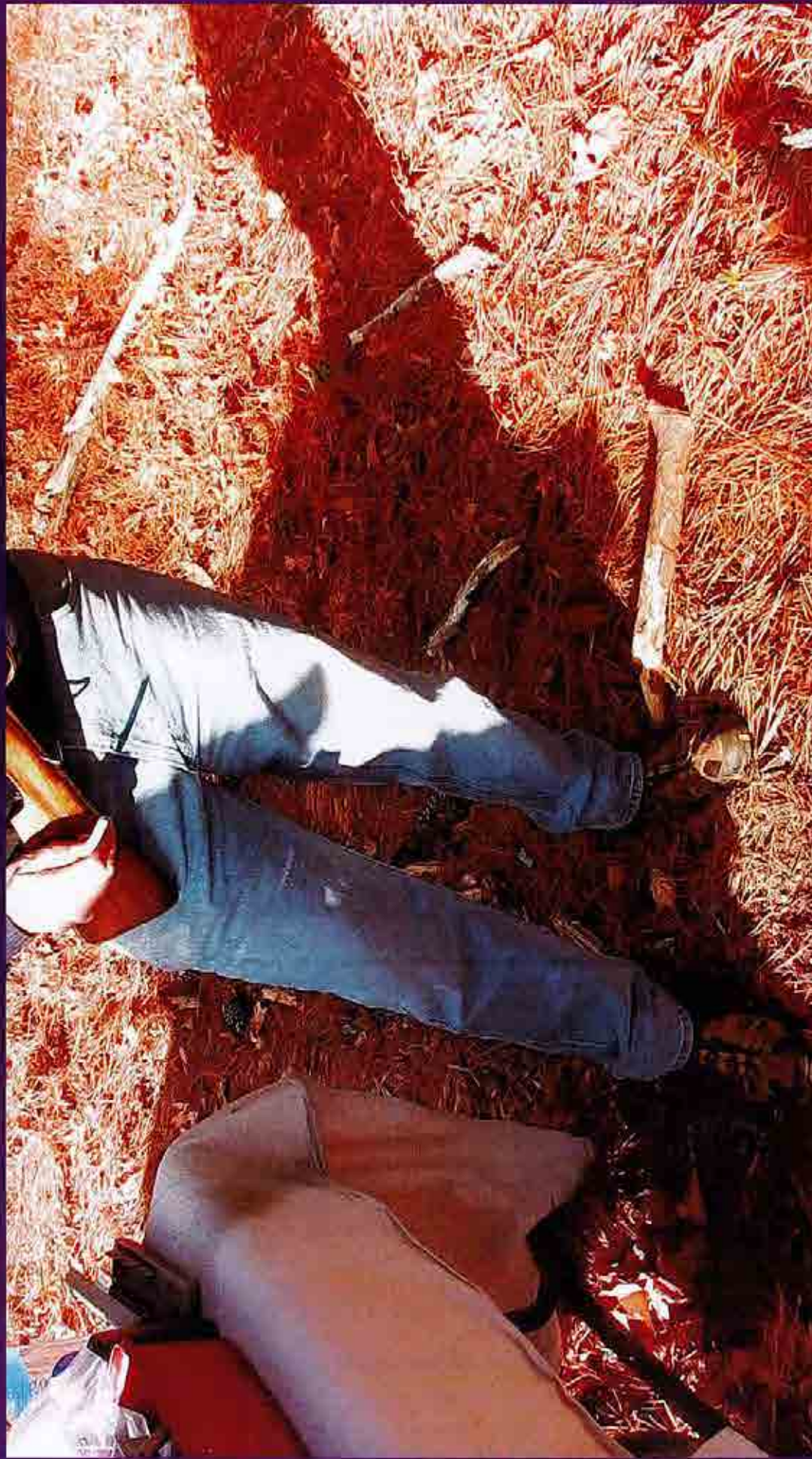
.69 ball with 3 .315
buckshot, buck and ball
cartridge.



Ball cartridges.



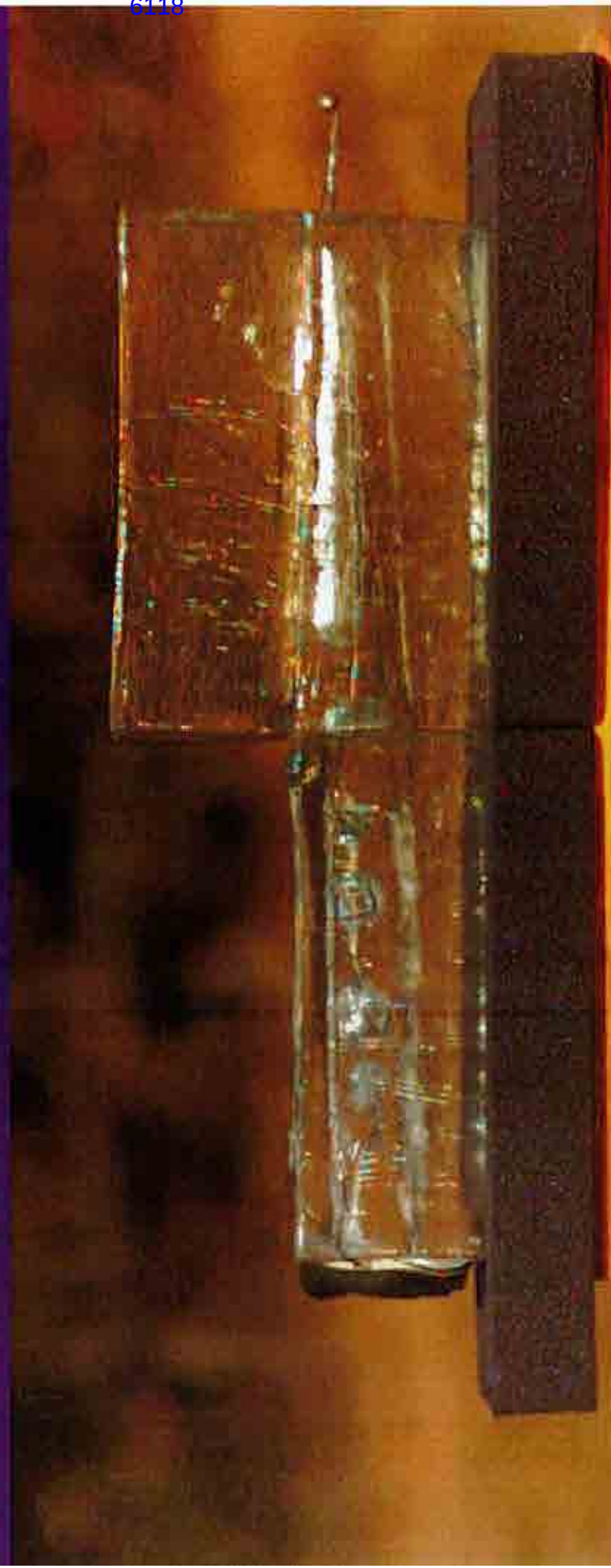
Flintlock loading sequence: Prime the pan, close the steel or frizzen, load the charge, and ram home the ball. With prepared cartridges soldiers were expected to fire at least 3 rounds per minute.



Live Fire – 1756 Long Land Pattern British Musket, actual
elapsed time – 0.4 second to full recoil



French M1766 Musket, .626 ball, 364.82 grains, 110 grain charge less 10 grains for priming. Velocity in 1025 f/s, passes through uniform cloth thickness, 32 inches Clear Ballistic gel, exits as velocity of 280 f/s. Range 25 yards.



British prismatic flints (black, L. unfired, R. expended after 20 shots, and French spall flint, unfired.

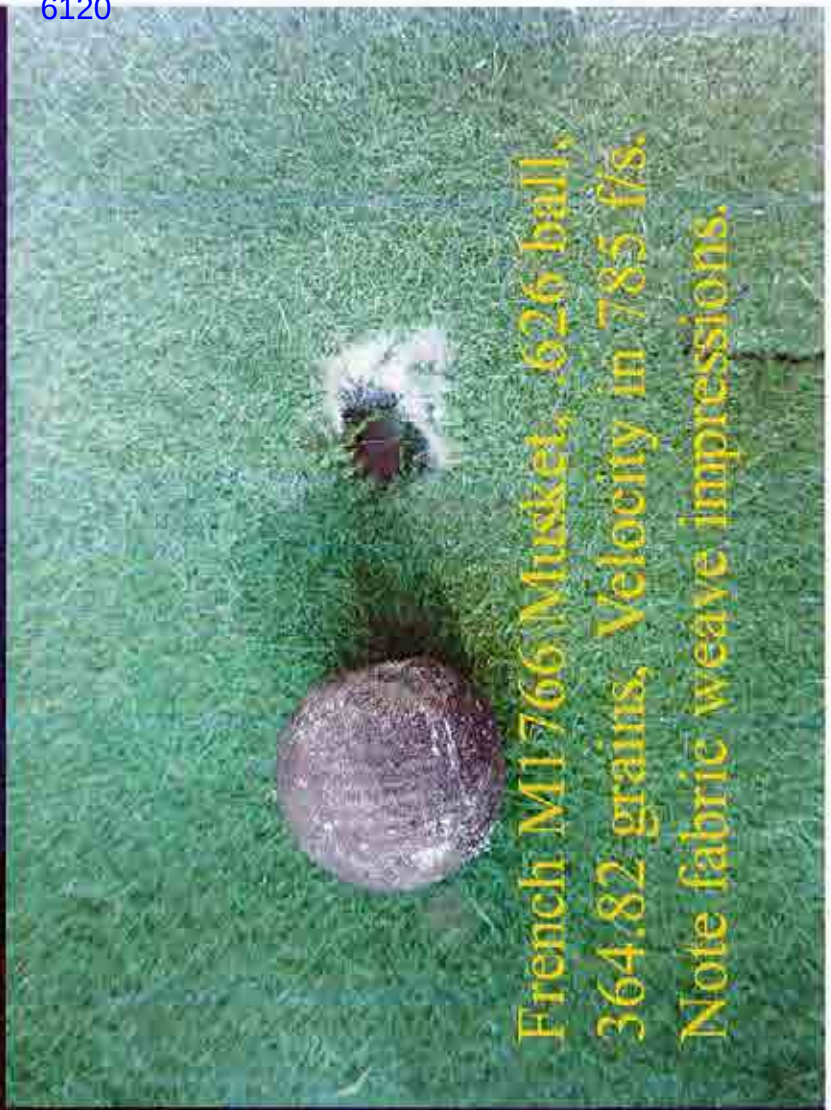




.69 – unfired and others at 600-630 f/s.

.626 – unfired and others at 905-1090 f/s.

.580 – unfired and others at 1415-1480 f/s.

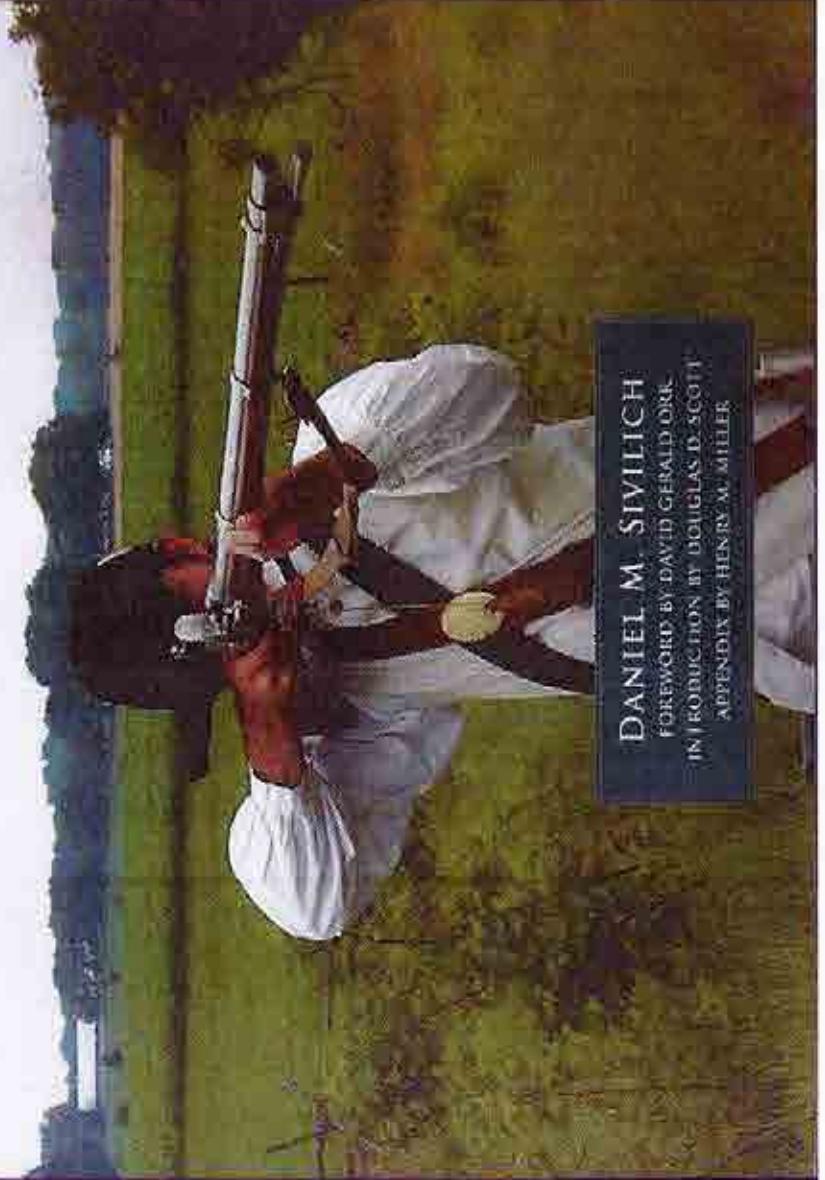


French M1766 Musket, .626 ball,
364.82 grains, Velocity in 785 f/s.
Note fabric weave impressions.



MUSKET BALL AND SMALL SHOT IDENTIFICATION

A GUIDE



DANIEL M. SIVILICH
FOREWORD BY DAVID GERALD ORL
INTRODUCTION BY DOUGLAS D. SCOTT
APPENDIX BY HENRY M. MILLER

Reference:

Scott, Douglas D., Joel Bohy, Nathan Boor, Charles
Haecker, William Rose, and Patrick Severts
2017 Colonial Era Firearm Bullet Performance: A Live
Fire Experimental Study for Archaeological
Interpretation.

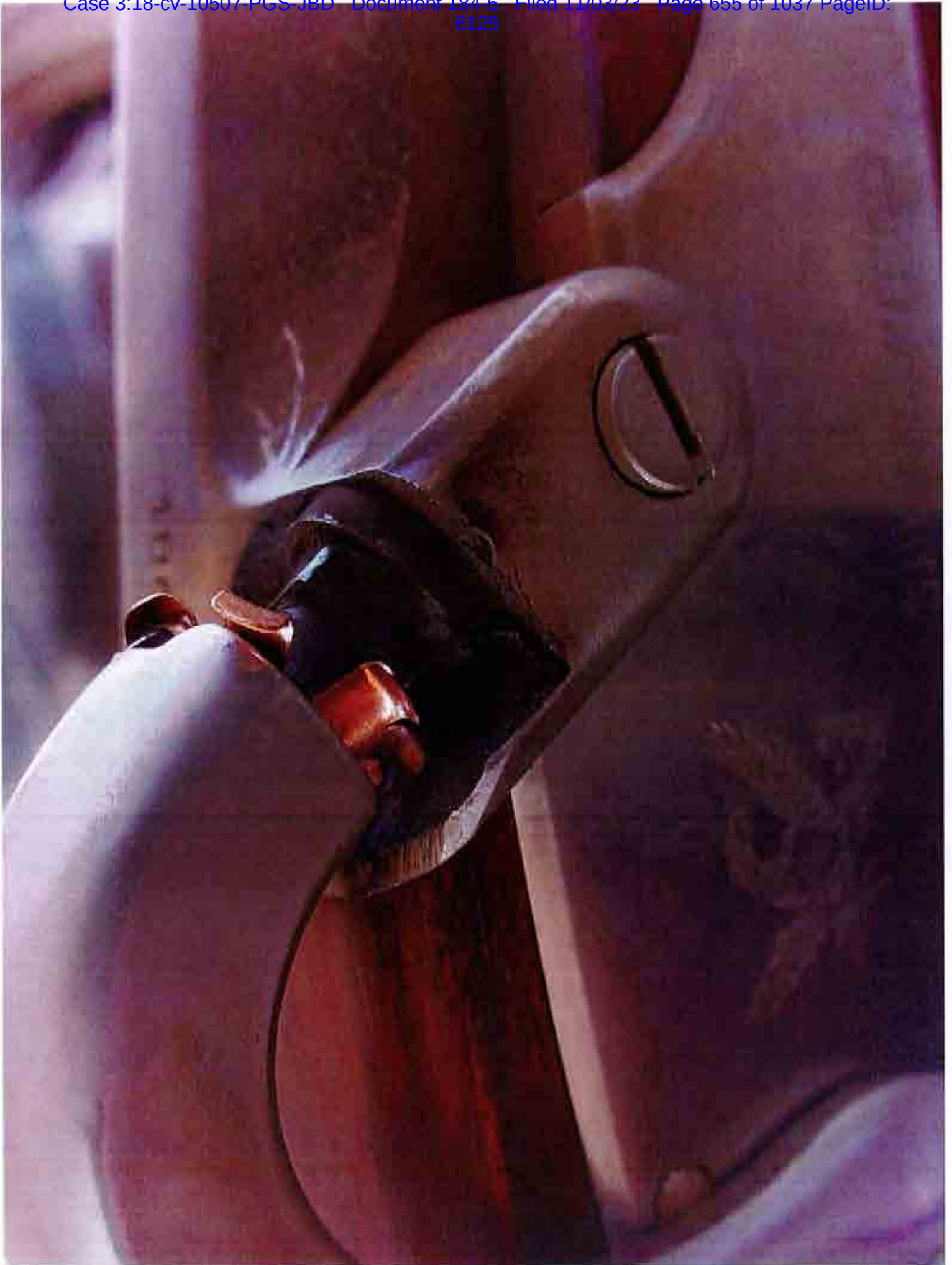
Available as a pdf:

Academia.edu and Modern Heritage Foundation
websites.

Percussion Cap Ignition System

Courtesy Lucien Haag, FSSI









.44-Caliber Percussion Revolver





Cylinder with Percussion Caps on the Nipples



Hammer in Safety Notch (Remington Revolver)



Carry Position

Fire Position

Full Cock

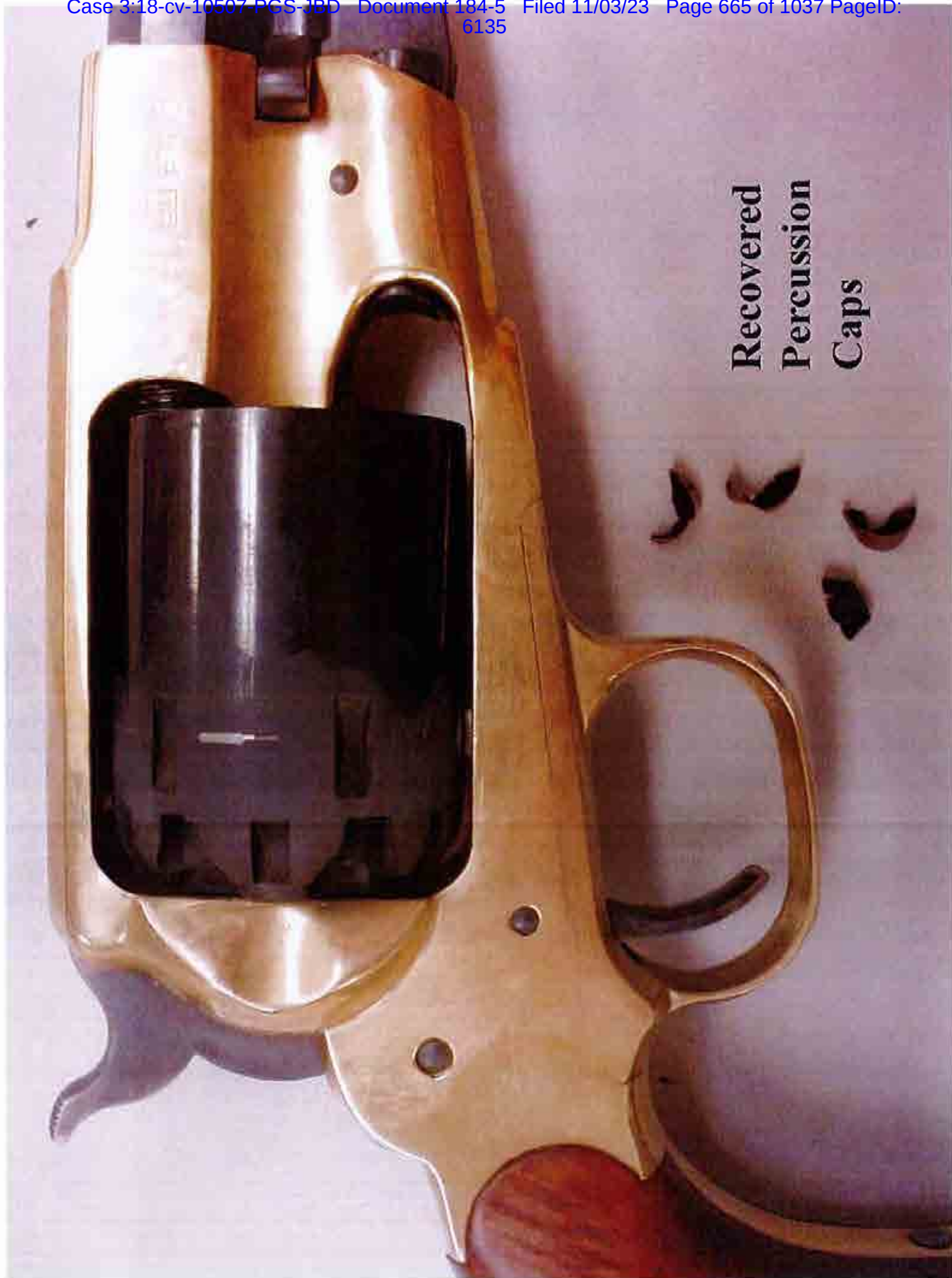
Hammer at



Fired Percussion Cap



**Recovered
Percussion
Caps**



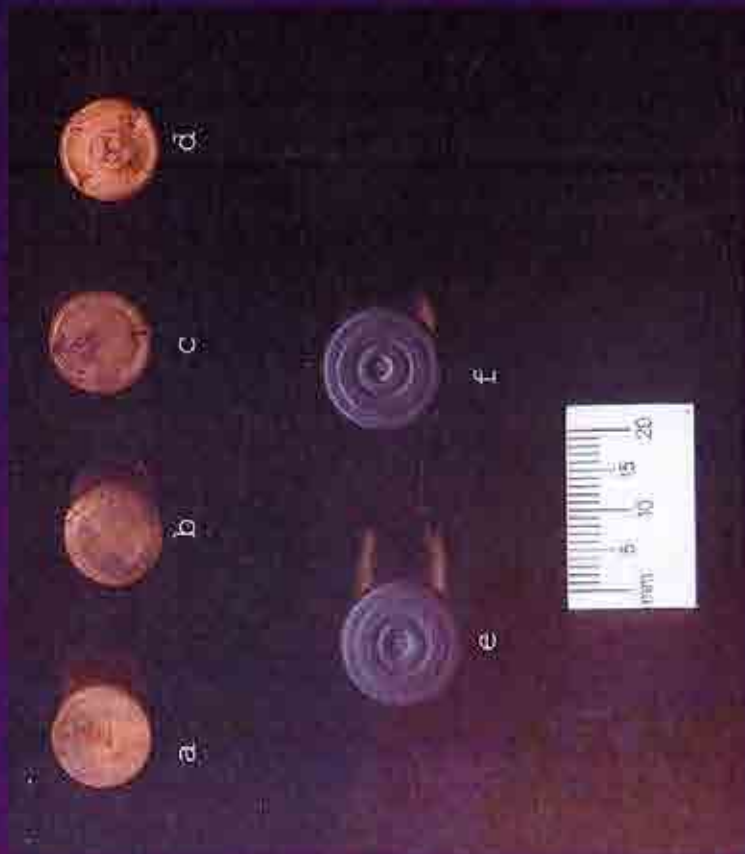
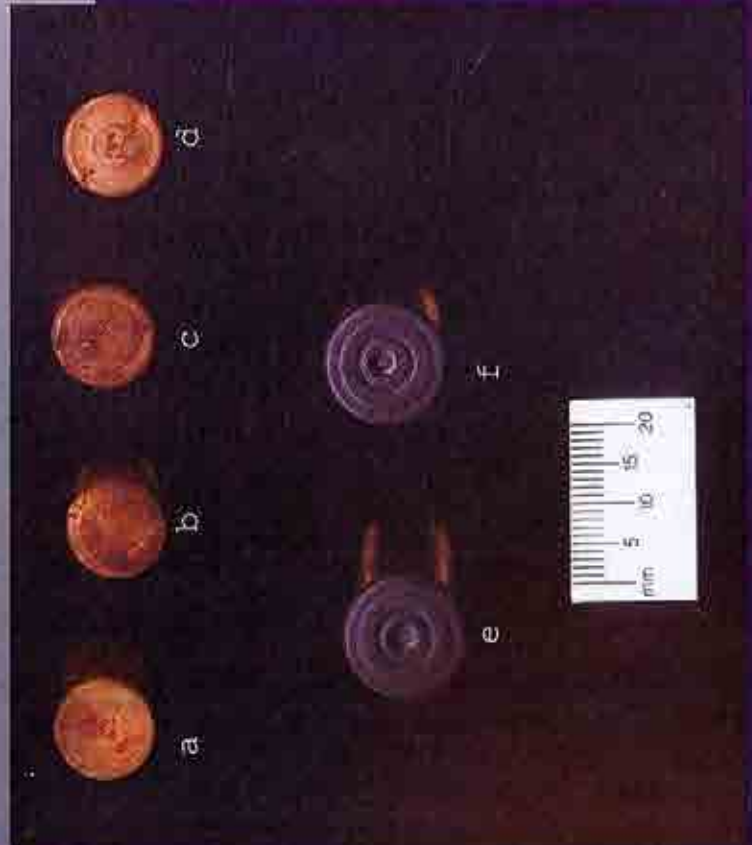


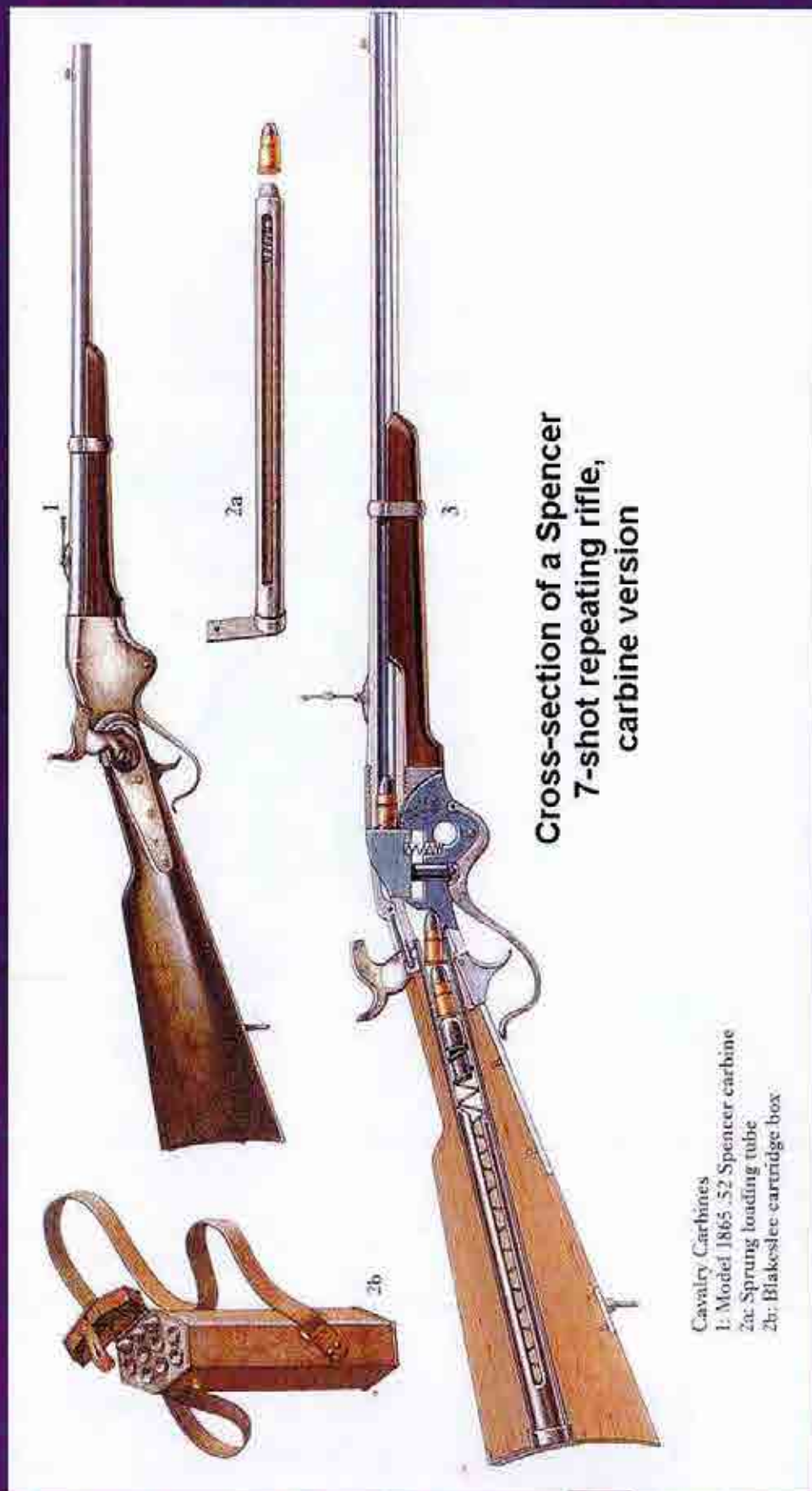


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Metallic Cartridge Blackpowder Firearms





Rimfire Cartridges Used in Spencer Rifles and Carbines

**.38
LONG**



.38 long

The cartridge used in Spencer's earliest, prototype, small-frame sporting rifles. Originally known as the No. 38 cartridge.

.56-.56



56-56 Spencer

The cartridge used in all Civil War Spencer rifles and carbines, including the Model 1860 Army and Navy rifles and the Model 1860 carbine. Originally known as the No. 56 Navy and Infantry cartridge.

.56-.50



56-50 Spencer

This cartridge was developed at Springfield Armory in late 1864, to be the standard ammunition for future carbines. It was originally known as the .50 caliber Springfield carbine cartridge.

**.44
LONG**



.44 long

Spencer's second prototype cartridge, used in his early, small-frame, military style carbines. Originally known as the No. 44 cartridge.

.56-.46



56-46 Spencer

This cartridge was developed at Springfield Armory in late 1863, in an attempt to improve ballistics of the 56-56 Spencer by reducing the bullet diameter. It was one of the first bottleneck cartridges.

.56-.52



56-52 Spencer

Developed commercially as an alternative to the 56-50 by Crittenden & Tibbals Manufacturing Company. It differed by its shorter case length, visible grease grooves, and more positive means of crimping the bullet.

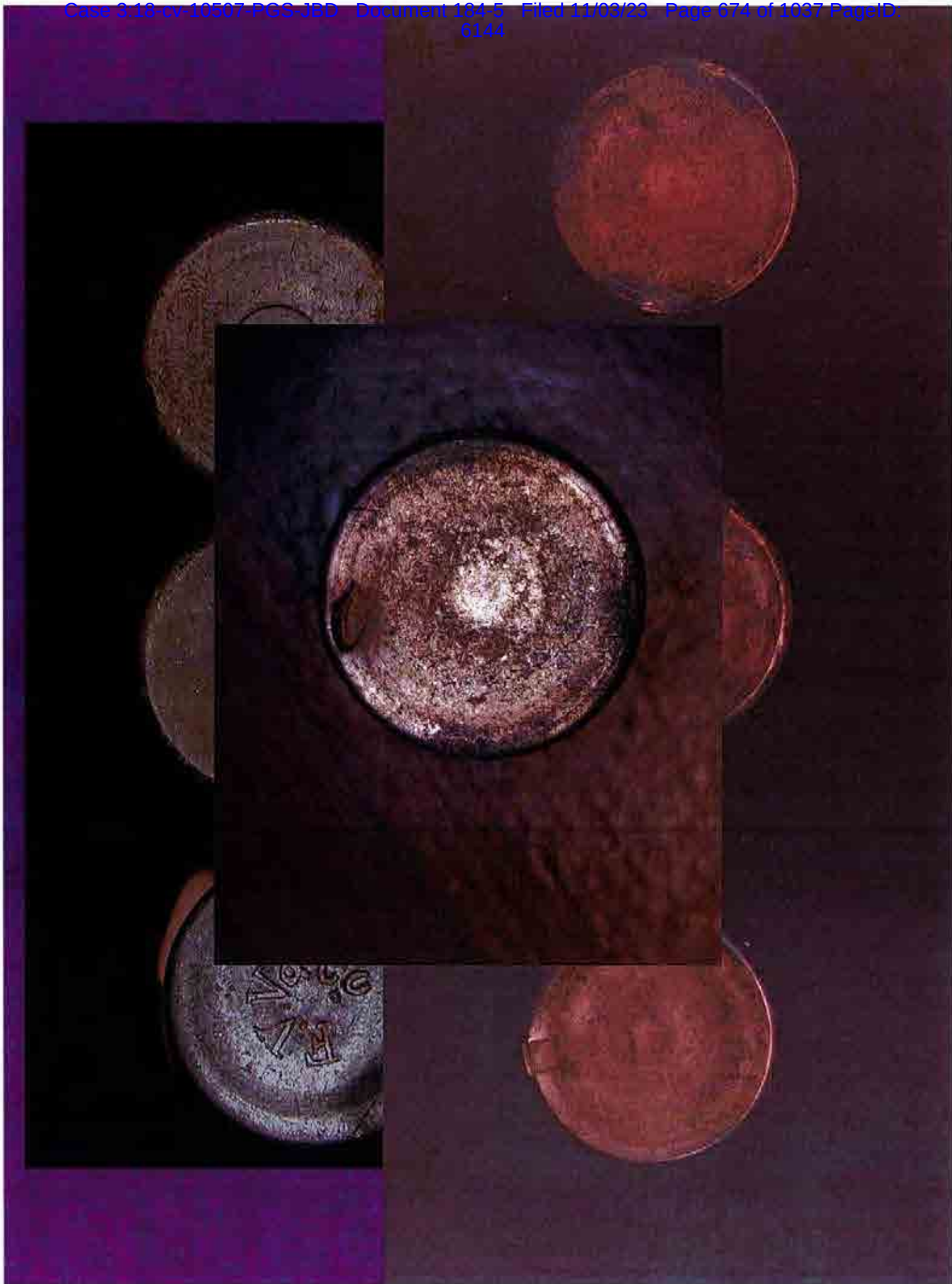
.56-56 SPENCER CARTRIDGES

**420-gr.,
.550" dia.
bullet**

**549" dia. 548" dia. 541" dia.
bullet bullet bullet**



Slides and Images by Luke Haag – Forensic Science Services, Carefree, AZ
Spencer cartridges from the C. Vance Haynes collection – Tucson, AZ



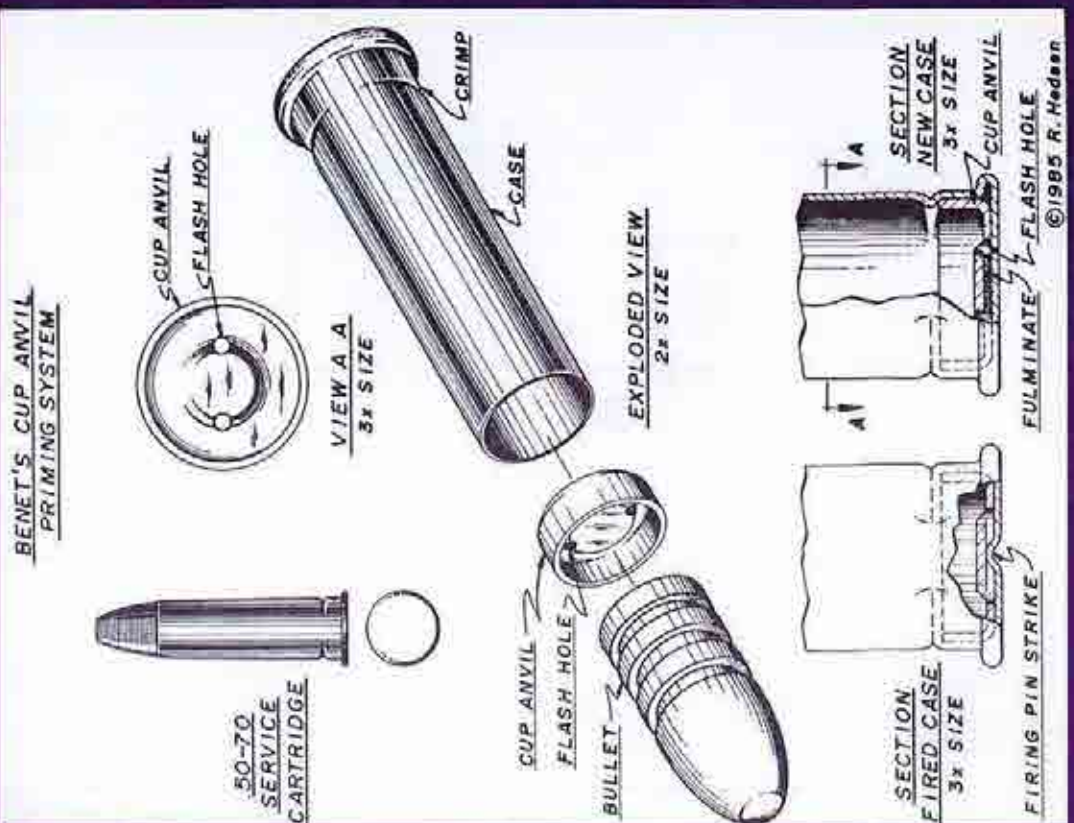








EXHIBIT 4

MARCH 7, 2015 TESTS
at
BEN AVERY RANGE
.72-Cal. "BROWN BESS"

Slides and Calculations

by

Luke Haag

Forensic Science Services, Inc.

Carefree, AZ

haagfssi@aol.com

BALLISTIC DATA

ROUND BALL DIAMETER: 0.718"

PROJECTILE WEIGHT: 552-gr.

POWDER BRAND: GOEX

POWDER TYPE: 2F

POWDER CHARGE: 100-gr. by volume

PATCH MATERIAL: cotton

PATCH THICKNESS: unk.

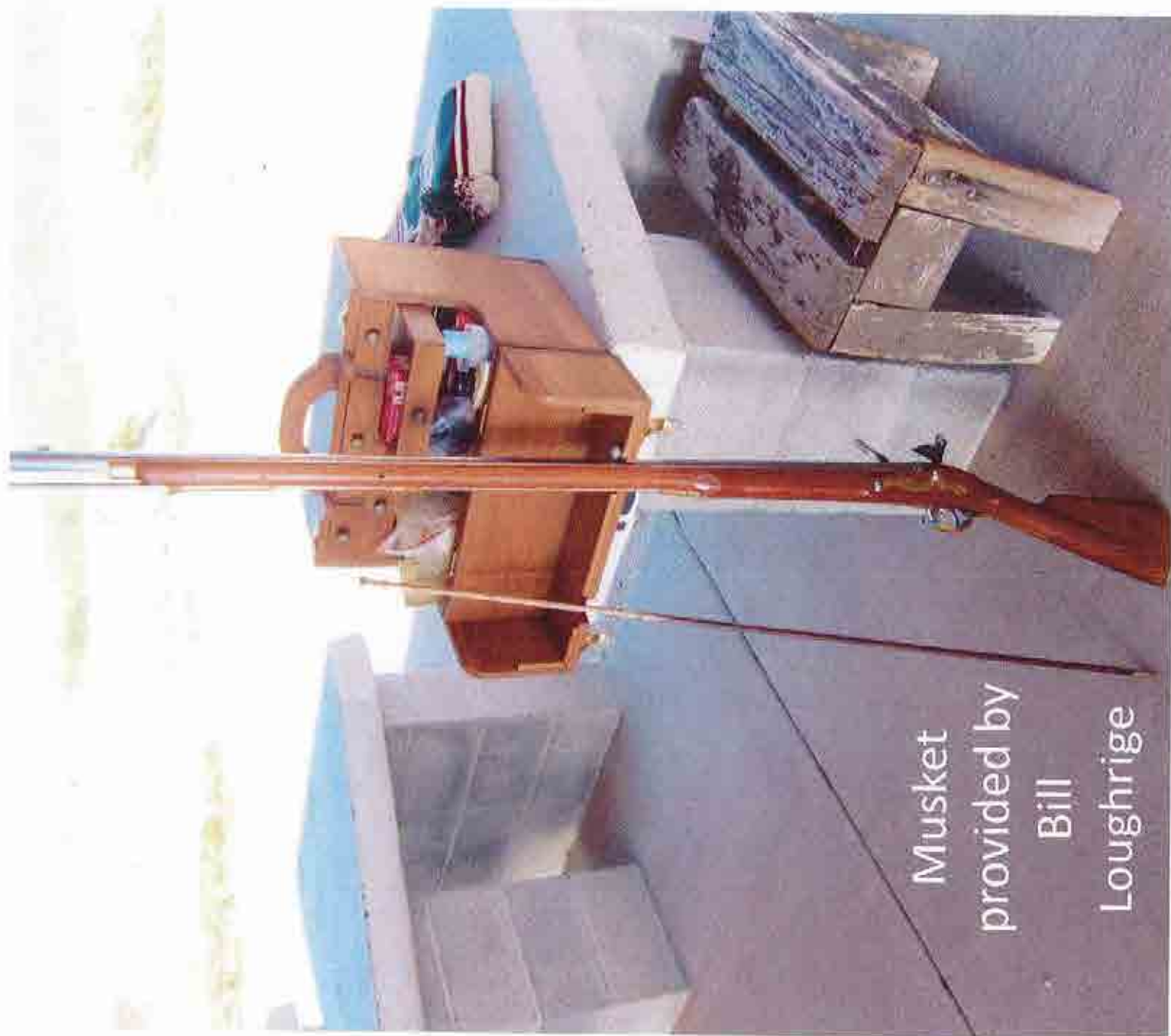
MET/SITE DATA

Temp. 70°F

RH 15%

Baro. 29.89"Hg

Site 1632' MSL



Musket
provided by
Bill
Loughrige



Bill
Loughrigan

PROJECTILES TRACKED
by
Luke Haag
with
FORENSIC SCIENCE SERVICES'S
INFINITION™ DOPPLER RADAR

0.718"

552-gr.

LEAD BALL

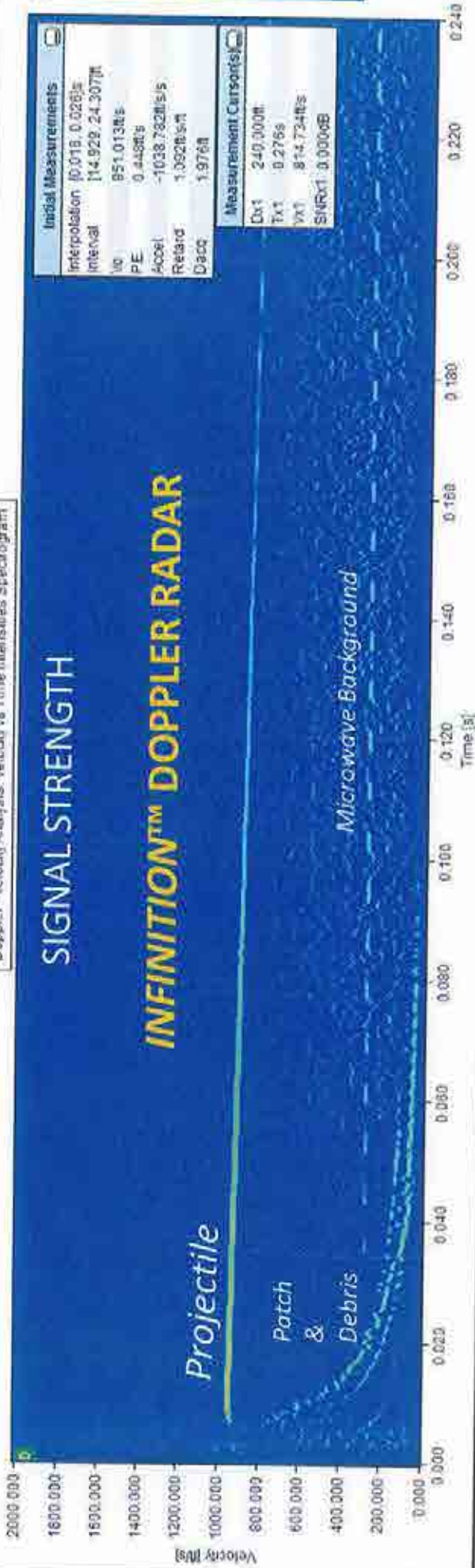


Lightning Powder Co., Inc.

(800) 852-0300

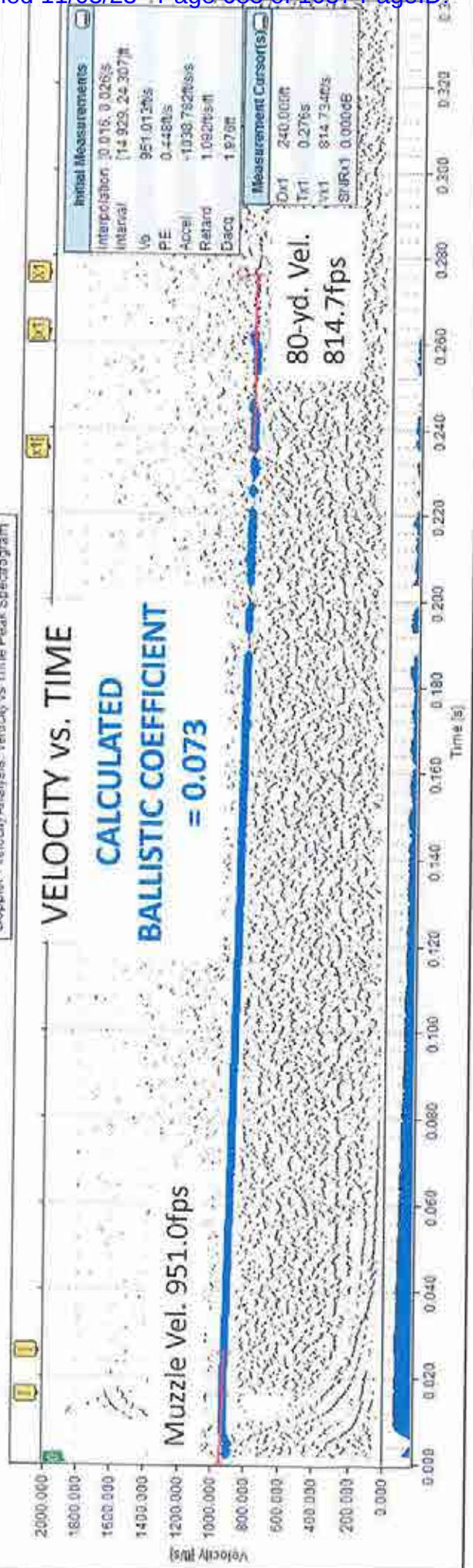
SHOT-1

Doppler - Velocity Analysis: Velocity vs Time Intensities Spectrogram

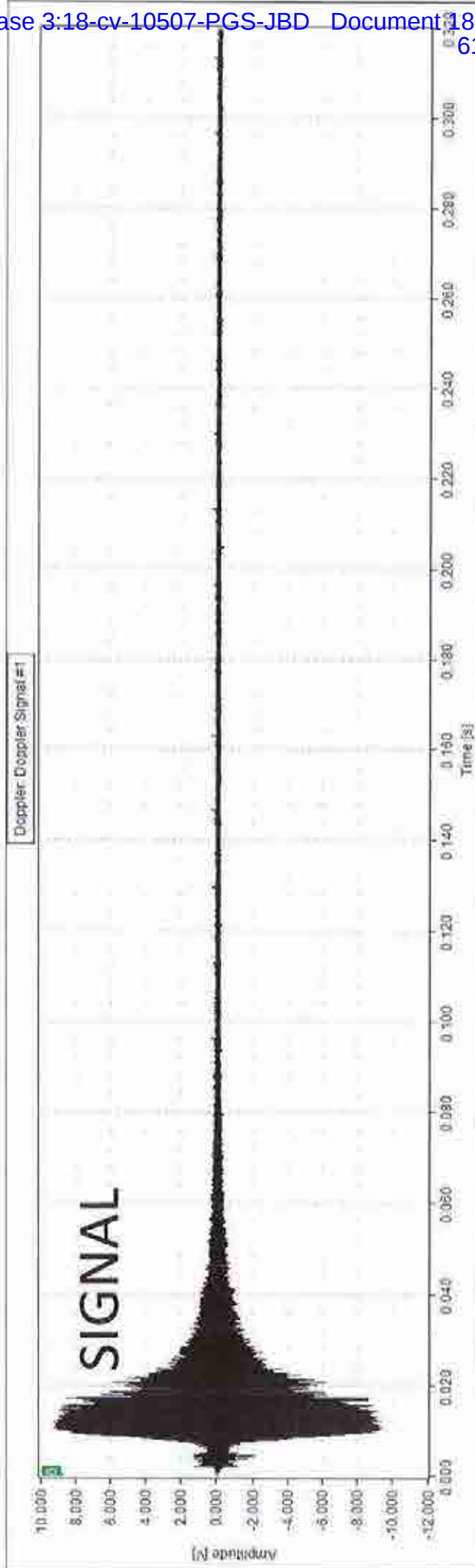


LOW VELOCITY SHOT

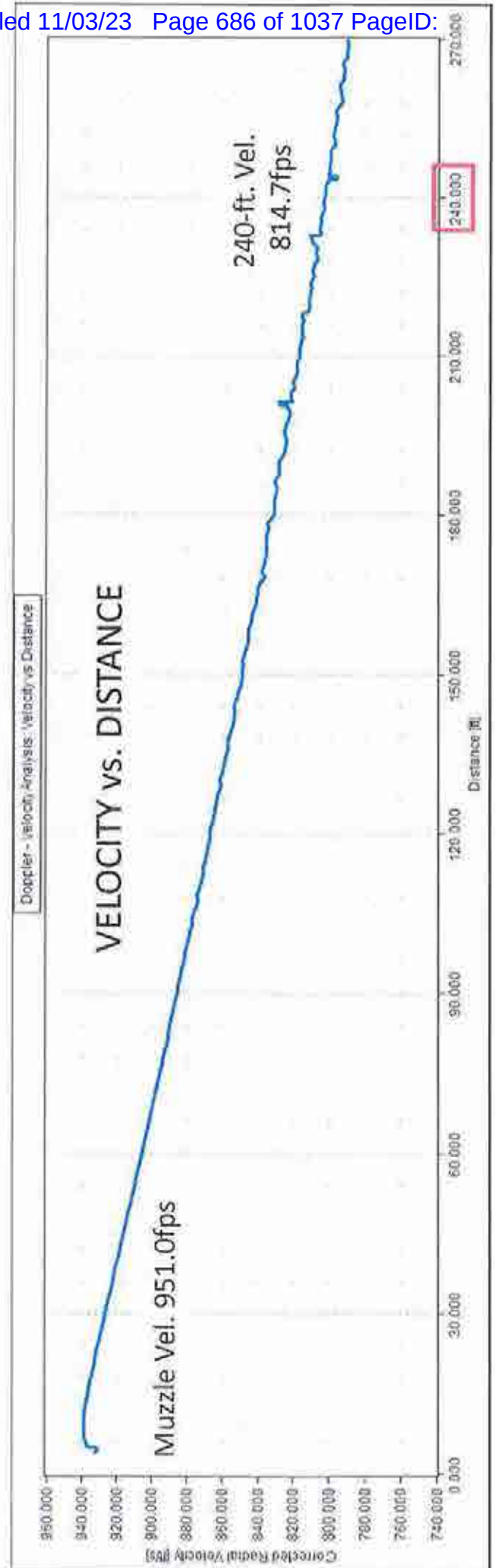
Doppler - Velocity Analysis: Velocity vs Time Peak Spectrogram



SHOT-1



LOW VELOCITY SHOT



SIERRA INFINITY-6 TABLE

Low Velocity Shot to 200-yards

Musket "Zeroed" at 50-yards

Trajectory for Custom .72 BROWN BESS at 951 Feet per Second

At an Elevation Angle of: 0 degrees

Ballistic Coefficients of: 0.073 0.073 0.073 0.073 0.073 0.073

Velocity Boundaries (Feet per Second) of: 1168 1168 1168 1168 1168

Wind Direction is: 0.0 o'clock and a Wind Velocity of: 0.0 Miles per hour

Wind Components are (Miles per Hour): DownRange: 0.0 Cross Range: 0.0 Vertical: 0.0

The Firing Point speed of sound is: 1132.09 fps

The bullet drops below the speed of sound on the trajectory (1132.09 fps) at: 00 yards

Altitude: 1632 Feet Humidity: 15 Percent Pressure: 29.85 in/Hg

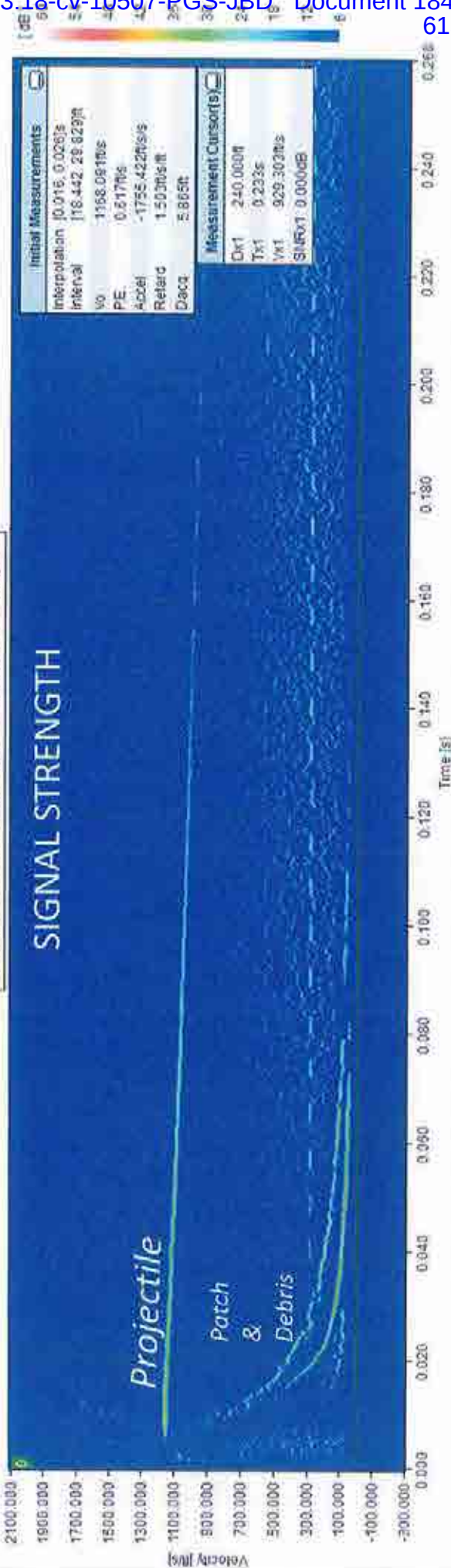
Temperature: 70 F

Data Printed in English Units

Range (Yards)	Velocity (Ft/Sec)	Energy (Ft/Lbs)	Momentum (Lb-sec)	Drop (inches)	Bullet Path (inches)	Bullet Path (1 MoA)	Wind Drift (inches)	Wind Drift (1 MoA)	Time of Flight (Seconds)
0	951.0	1108.3	2.33	0.0	-0.5	0.0	0.0	0.0	0.00000000
20	911.4	1018.0	2.23	-0.79	0.97	4.6	0.0	0.0	0.06447335
40	876.3	941.1	2.15	-3.26	0.77	1.8	0.0	0.0	0.13163025
60	844.5	873.9	2.07	-7.53	-1.24	-2.0	0.0	0.0	0.20139390
80	815.0	814.0	2.00	-13.75	-5.2	-6.2	0.0	0.0	0.27373159
100	787.3	759.7	1.93	-22.07	-11.25	-10.7	0.0	0.0	0.34864790
120	761.2	710.2	1.87	-32.63	-19.55	-15.6	0.0	0.0	0.42616586
140	736.5	664.7	1.81	-45.59	-30.25	-20.6	0.0	0.0	0.50631756
160	712.9	622.8	1.75	-61.11	-43.5	-26.0	0.0	0.0	0.58914867
180	690.2	583.8	1.69	-79.37	-59.5	-31.6	0.0	0.0	0.67471745
200	668.4	547.6	1.64	-100.55	-78.42	-37.4	0.0	0.0	0.76309385

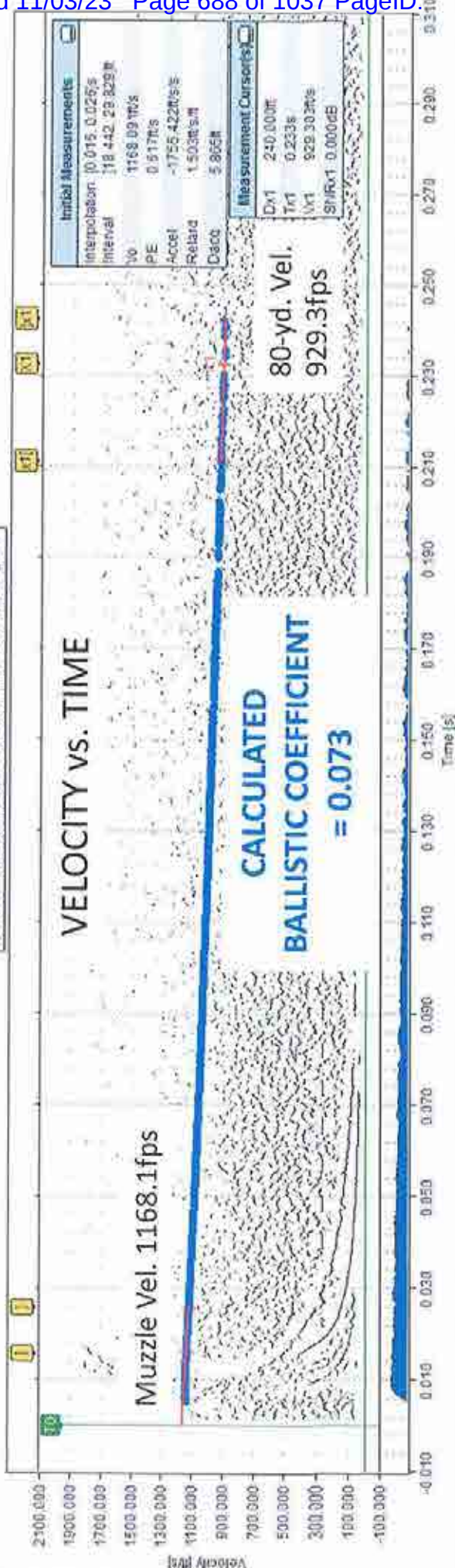
SHOT-2

Doppler - Velocity Analysis: Velocity vs Time Intensities Spectrogram

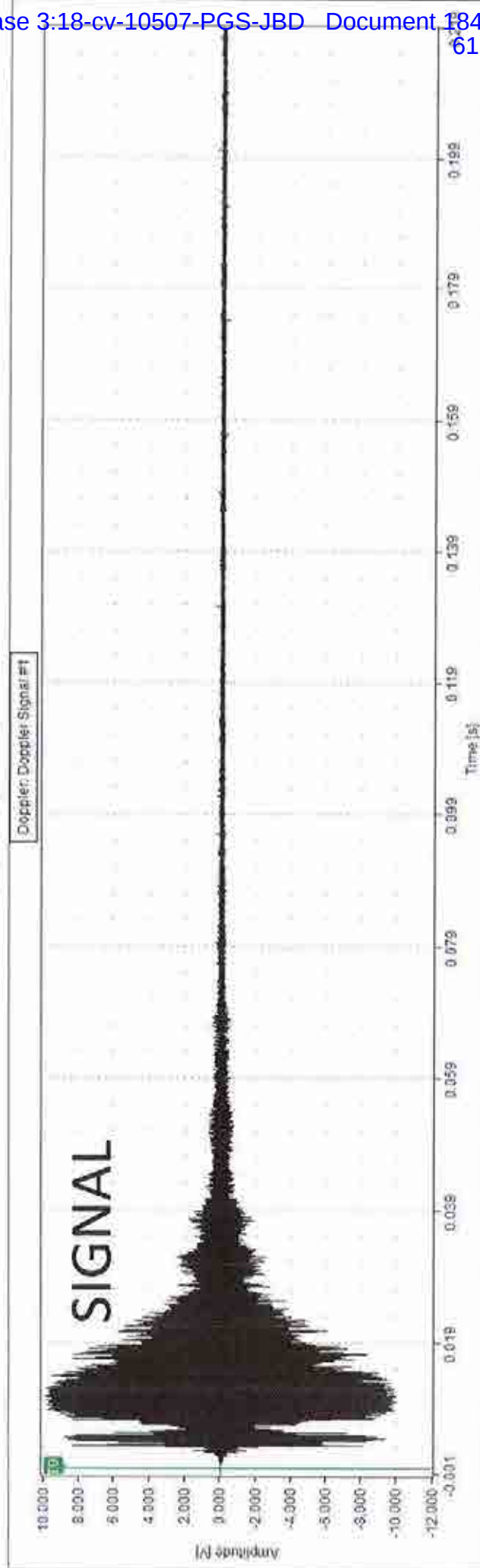


HIGH VELOCITY SHOT

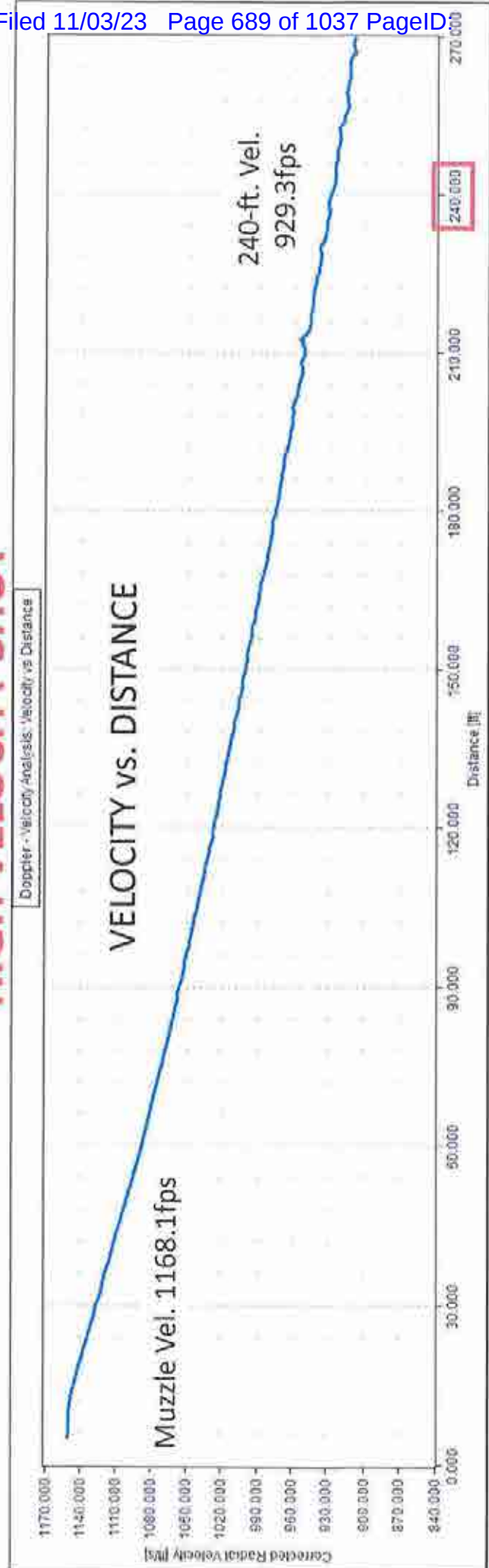
Doppler - Velocity Analysis: Velocity vs Time Peak Spectrogram



SHOT-2



HIGH VELOCITY SHOT



SIERRA INFINITY-6 TABLE

High Velocity Shot to 200-yards

Musket "Zeroed" at 50-yards

Trajectory for Custom .72 BROWN BESS at 1168 Feet per Second

At an Elevation Angle of 0 degrees

Ballistic Coefficients of 0.073 0.073 0.073 0.073 0.073 0.073

Velocity Boundaries (Feet per Second) of 1168 1168 1168 1168 1168

Wind Direction is 0.0 o'clock and a Wind Velocity of 0.0 Miles per hour

Wind Components are (Miles per Hour) DownRange: 0.0 Cross Range: 0.0 Vertical: 0.0

The Firing Point speed of sound is 1132.09 fps

The bullet drops below the speed of sound on the trajectory (1132.09 fps) at 08 yards

Altitude: 1632 Feet Humidity: 15 Percent Pressure: 29.85 in/Hg

Temperature: 70 F

Data Printed in English Units

Range (Yards)	Velocity (Ft/Sec)	Energy (Ft/Lbs)	Momentum (Lb-sec)	Drop (inches)	Bullet Path (inches)	Bullet Path (1 MoA)	Wind Drift (inches)	Wind Drift (1 MoA)	Time of Flight (Seconds)
0	1168.0	1671.8	2.86	0.0	-0.5	0.0	0.0	0.0	0.00000000
20	1084.4	1441.0	2.66	-0.54	0.6	2.9	0.0	0.0	0.05340185
40	1021.6	1278.9	2.50	-2.25	0.53	1.3	0.0	0.0	0.11047282
60	971.3	1156.2	2.38	-5.3	-0.88	-1.4	0.0	0.0	0.17075016
80	929.0	1057.7	2.28	-9.82	-3.76	-4.5	0.0	0.0	0.23394502
100	892.0	975.2	2.19	-15.96	-8.25	-7.9	0.0	0.0	0.29987863
120	858.8	903.9	2.10	-23.83	-14.49	-11.5	0.0	0.0	0.36844878
140	828.4	840.9	2.03	-33.6	-22.61	-15.4	0.0	0.0	0.43960333
160	799.9	784.2	1.96	-45.39	-32.76	-19.5	0.0	0.0	0.51333091
180	773.1	732.5	1.89	-59.35	-45.08	-23.9	0.0	0.0	0.58964953
200	747.8	685.3	1.83	-75.64	-59.72	-28.5	0.0	0.0	0.66858605

EXHIBIT 5



Exhibit 5. Left to right: 12-gauge Winchester rifled slug cartridge; 12-ga. rifled slug showing hollow base; 12-ga. rifled slug side view; .69 caliber Brown Bess musket ball.

EXHIBIT 6

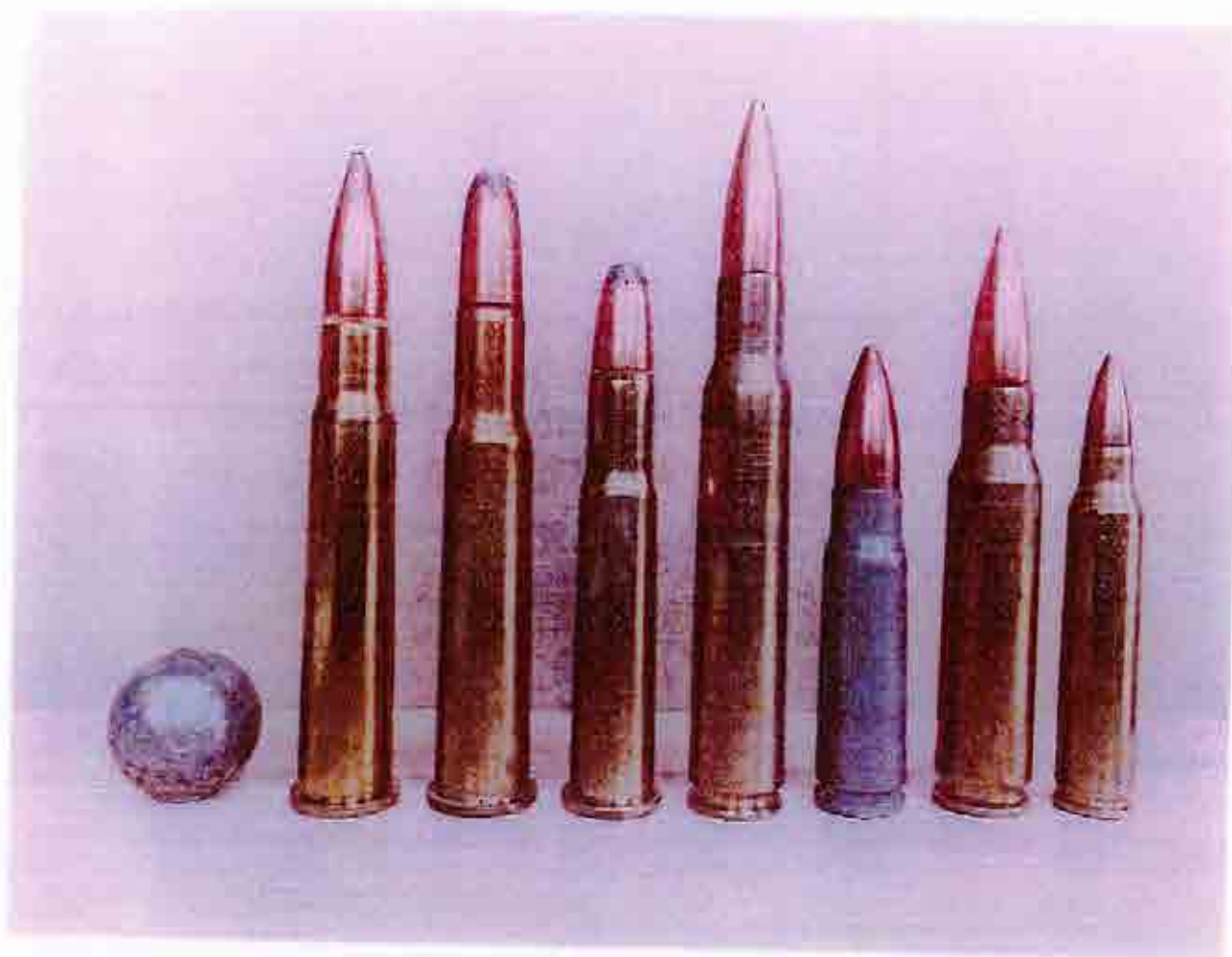


Exhibit 6. Left to right. .69 caliber Brown Bess musket ball (1722-1867); .303 British cartridge (1888); .30-40 Krag (1892); .30-30 Winchester (1895); .30-06 (1906); 7.62x39mm AK-47 cartridge (1947); 7.62mm NATO/.308 Winchester (1950's); .223 Remington/5.56mm NATO AR-15 cartridge (1960's-1970's).



EMANUEL KAPELSOHN - Recent Deposition and Trial Testimony

1. Commonwealth of Pennsylvania v. Jeremy Hamborsky, Court of Common Pleas, Fayette County (2014). Trial Testimony (2014).
2. Estate of Shafer v. City of Elgin, Eric Kilpatrick, et al., U.S.D.C., District of Oregon, Pendleton Division, Case No. 2:12-cv-00407-SU. Trial testimony (2014).
3. Schuoler v. Dupnik, et al., Superior Court, State of Arizona, Pima County, No. C-20140079 Deposition (2014).
4. Leapers, Inc. v. SMTS, LLC, d/b/a TUFF ZONE, et al., U.S. District Court, Eastern District of Michigan, Southern Division, Civ. No. 2:14-cv-12290-RHC-DRG. Deposition testimony (2015).
5. Leone v. Towanda Borough, et al., U.S. District Court, Middle District of Pennsylvania, Case No. 3:2-AT-06000. Trial testimony (2015).
6. Adams v. Sheriff Ric L. Bradshaw, Palm Beach County Sheriff's Office, U.S. District Court, Southern District of Florida, Case No. 9:14-CV-80403. Deposition (2015).
7. Antquan Watson Shooting case, Atlantic County MCU Case No. MCU 14-019. Testimony before Atlantic County Grand Jury (2015).
8. Pickett v. City of Chicago, et al., U.S. District Court, Northern District of Illinois, Eastern Division, No. 12C-4118. Deposition (2015).
9. Shaun Brown Shooting. Testimony before Atlantic County Grand Jury (Sept. 29, 2015).
10. Chavez v. Glock, Inc., et al., Superior Court, State of California, County of Los Angeles, Central Division, Case No. BC394135. Deposition (2015).
11. McDonald v. Dupnik, Pima County, et al., Superior Court of State of Arizona, County of Pima, Case No. C20142895. Deposition (2015).
12. Schuoler v. Nanos, et al., Superior Court of State of Arizona, County of Pima, Case No. C20140079. Trial testimony (2015).
13. Commonwealth of Pennsylvania v. Michael Miller, Centre County Court of Common Pleas, Bellefonte, PA. Trial testimony (2015).
14. Tremaine Dantzler Shooting. Testimony before Atlantic County Grand Jury (December 10, 2015).

335055-1

15. Roxette Ojeda v. City of Fort Pierce, et al., Circuit Court, 19th Judicial District, in and for St. Lucie County, FL, Case No: 56:2014-CA-001732 (NS). Deposition (2016).
16. Commonwealth v. John Elliott Torres, York County Court of Common Pleas, No. CP-67-CR-3515-2014. Trial testimony (2016).
17. Commonwealth of Pennsylvania v. Baur, Court of Common Pleas, Philadelphia County, PA, No. CR-10543-2014. Trial testimony (2016).
18. Little v. Academy, Ltd, Bushnell, et al., 334th Judicial District, Harris County, TX, Cause No. 2014-52373. Deposition (2016).
19. Russell Hicks v. Camden County Correctional Facility, New Jersey Office of Administrative Law, OAL Docket No. CSR 13494-2012-S. Hearing testimony (2016).
20. State of Maryland v. James Cooper, Circuit Court, Carroll County, No. 06K15046865. Trial testimony, 2016.
21. State of New Jersey v. Stephen Schweizer, Superior Court, Cape May County, Indictment #15-04-00334-I. Trial testimony (2016).
22. State of Maryland v. Wesley Cagle, Circuit Court, Baltimore City, Case No. 115246012. Trial testimony (2016).
23. Chatman v. City of Chicago, U.S. District Court, Northern District of Illinois, Eastern Division, Case No. 13 CV 5697. Trial testimony (2016).
24. State of Iowa v. Steve W. Fordyce II, District Court, Black Hawk County, Crim. No. FECR208081. Trial testimony (2016).
25. State of Louisiana v. Jody Ledoux, Fourth Judicial District, Parish of Oachita, No. 15-F-000153. Trial testimony (2016).
26. Jones v. Allen, U.S. District Court, District of Maryland, C.A. No. 8:15-cv-01173-GJH. Trial testimony (2016).
27. S.R. Nehad, et al. v. Shelley Zimmerman and City of San Diego, et al., U.S. District Court, Southern District of California, Case No. 15-cv-1386-WQH-NLS. Deposition (2017)
28. Green v. City of Chicago, Circuit Court of Cook County, IL, No. 2013 L 014041. Deposition and trial testimony (2017).
29. Schueller v. Cordrey, et al., Superior Court of the State of Delaware, Case. No.: N14C-10-201 EMD. Trial testimony (February 23, 2017).

30. Pratt v. City of Camden, et al., U.S. District Court, District of New Jersey, Docket No. 1:13-cv-06830-JBS-AMD. Deposition (2017).
31. State of Minnesota v. Yanez, Ramsey County District Court, No. 62-CR-16-8110. Trial testimony (2017).
32. Williamson v. Chicago Police Officer Wilfredo Ortiz, et al., U.S. District Court, Northern District of Illinois, Eastern Division, No. 14 CV 6397. Deposition (2017)
33. State of New Jersey v. Sergio DeRosa, Superior Court, Atlantic County, NJ. Trial testimony (2017)
34. Estate of Angel Lopez v. City of San Diego, U.S. District Court, Southern District of California, Case No. 13cv2240 GPC (MDD). Trial testimony (2017)
35. State of Ohio v. Robert Burry, Lake County Court of Common Pleas. Trial testimony (2017)
36. State of Arizona v. Philip Mitchell Brailsford, Maricopa County Superior Court, No. CR2016-004743-001 DT (2017). Trial testimony (2017)
37. Wallace v. City of Alexander, et al., U.S. District Court, Eastern District of Arkansas, No. 4:13-CV-00748-BRW (2017). Trial testimony (2017).
38. State of Wisconsin v. Devon Kraemer. Circuit Court, Milwaukee County, Criminal Division. Case number 2016-CF-005003. Trial testimony (2018).
39. Mason v. City of Lafayette, et al., U.S. District Court, Western District of Louisiana. Civil Action No. 6:12-CV-02939. Trial testimony (2018)
40. State of Minnesota v. Carl Patrick Anderson, Chisago County District Court, Tenth Judicial District, File No. 13-CR-17-159. Trial testimony (2018)
41. Velazquez v. City of Camden, et al. Superior Court, Camden County, New Jersey. Docket No. CAM-L-1350-10. Trial testimony (re-trial after appeal, 2018).
42. LeGrier v. City of Chicago, et al., Circuit Court, Cook County, Illinois, No. 15 L 12964. Trial testimony (2018).
43. Washington, D.C. Metropolitan Police Trial Board Hearing in Shooting of Terrence Sterling by Police Officer Brian Trainer. Hearing testimony (2018).
44. Michael Rogers v. Trooper Matthew Morgan and State of Delaware, Delaware Superior Court, C.A. No. N15C-07-259 WCC. Trial testimony (2018).

45. Commonwealth of Pennsylvania v. Razawn Moore, Court of Common Pleas, Dauphin County, No. 2228CR2016. Trial testimony (2018).
46. Commonwealth of Pennsylvania v. Stephen Spencer, Court of Common Pleas, Luzerne County, Criminal Division, No. 2491 of 2017. Trial testimony (2018).
47. Cockerham v. City of Chicago, et al., Circuit Court of Cook County, IL, Case No. 16 L 1682. Deposition and trial testimony (December 2018).
48. Siler v. City of Kenosha, et al., U.S. District Court, Eastern District of Wisconsin, Case #17-CV-1324. Deposition (December 2018).
49. Garrit v. City of Chicago, et al., U.S. District Court, Northern District of Illinois, Eastern Division, Case. No. 16-C-7319. Deposition (2019).
50. Commonwealth v. Barbara Rogers, Court of Common Pleas, Monroe County, PA. Docket No. 2045 CR 2017. Trial testimony (March 2019).
51. Stephens v. Ric Bradshaw, Sheriff, Palm Beach County Sheriff's Office, et al., Claims Bill Hearing before Special Masters of the Florida Legislature. Hearing testimony (March 2019).
52. Golatte v. City of Chicago, U.S District Court, Northern District of Illinois, Eastern Division, No. 17 CV 929. Deposition (2019).
53. State of Minnesota v. Mohamed Noor, Hennepin County District Court, Minneapolis, MN, MNCIS No. 27-CR-18-6859. Trial testimony (2019).
54. In the Matter of Charges Filed Against Police Officer Robert Rialmo, Case No. 18 PB 2950 Before the Police Board of the City of Chicago. Hearing testimony (2019).
55. Etheredge v. City of Chicago, et al., Circuit Court, Cook County, Illinois, County Department, Law Division, No. 17 L 2841. Deposition (2019).
56. Commonwealth of Pennsylvania v. Idean Fulton, Court of Common Pleas, Philadelphia County, PA, Docket No. CP-51-CR-0012441-2010. Trial testimony (2019).
57. State of New Hampshire v. Joseph Brown, Superior Court, Grafton County, Docket No. 215-2019-CR-204. Deposition (2020).
58. Commonwealth of Pennsylvania v. Jonathan Robert Roselle, Court of Common Pleas, Lehigh County, PA, Criminal Division, Case No. CR-4106-2018. Trial testimony (2020).
59. Testimony by invitation before the Pennsylvania General Assembly, House Judiciary Committee, hearing on Police Use of Force and Department Accreditation. Sept. 15, 2020.

60. Miller v. Becerra, U.S. District Court, Southern District of California, Case No. 3:19-cv-01537-BEN-JLB. Live and videoconference hearing and trial testimony (2020, 2021).
61. Haywire Outfit v. City of Yakima, et al., Superior Court, State of Washington, Yakima County, Case No. 19-2-01964-39 (deposition, 2020).
62. State of New Hampshire v. Joseph Brown, Superior Court, Grafton County, Docket No. 215-2019-CR-204. Hearing (2021).
63. Sperling v. Clark Rifles, Superior Court, State of Washington, Clark County, No. 16 2 024312, Deposition (2021).
64. Taylor v. Barsony Holsters & Belts, Inc., U.S. District Court, District of Nebraska, No. 8:18-cv-00210. Deposition (2021).
65. Estate of Sean O'Brien v. City of Livingston, et al., U.S. District Court, District of Montana, Billings Division, No. CV-18-106-BLG-SPW-TJC. Trial Testimony (2021).
66. Estate of Sean O'Brien v. City of Livingston, et al., U.S. District Court, District of Montana, Billings Division, No. CV-18-106-BLG-SPW-TJC. Trial Testimony (2021; re-trial after mistrial).
67. State of Mississippi v. Eaton, Circuit Court of Tippah County, Cause No. 2019-068, 2019-133. Trial Testimony (2021).
68. Commonwealth of Kentucky v. Cundiff, Muhlenberg Circuit Court, Case No. 20-CR-00066. Trial Testimony (2021).
69. In re. the Matter of the Welfare of Logan D. Keranen, District Court, Seventh Judicial District of Minnesota, Criminal Division, File No. 03-JV-20-1872. Trial Testimony (2022).
70. Commonwealth of Pennsylvania v. Luis Daniel Ortiz, Court of Common Pleas, Northampton County, Criminal Division. Trial Testimony ((2022)
71. State of West Virginia v. Thomas McCallister, Circuit Court, Cabell County (Huntington), WV. Trial Testimony (2022).
72. Caravana v. On Q Protection and Investigation Services, et al., Circuit Court, Cook County, IL, County Dept., Law Division, No. 19 L 7900. Deposition (2022)
73. Commonwealth of Pennsylvania v. Christopher McKenzie, Court of Common Pleas, Greene County. Trial Testimony (2023).

74. State of New Jersey v. James Ray III, Essex County Superior Court, Indictment 19-0200437, Trial Testimony (2023).
75. Roman v. City of Chicago, et al., U.S. District Court, Northern District of Illinois, Eastern Div., Case No.: 20 CV 01717, Deposition (2023).
76. Coxie v. Academy Ltd. d/b/a Academy Sports and Outdoors, Court of Common Pleas, Seventh Judicial Circuit, State of South Carolina, County of Spartanburg, Civil Action No. 2018-CP-42-04297. Deposition (2023).



Fee Schedule – The Peregrine Corporation – ANJRPC Cases:

The Peregrine Corporation will charge as follows for work in the above-referenced cases:

For case preparation time by Emanuel Kapelsohn: \$400 per hour

For in-transit travel time over 3 hours each way: \$275 per hour

For in-person attendance or participation by Emanuel Kapelsohn at depositions or trials: \$3,750 per 10-hour day or part

For video depositions taken within 20 miles of Allentown, PA: Charged hourly, at \$400/hr.

Paraprofessional Assistant's time: \$85 per hour

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE SOUTHERN DISTRICT OF CALIFORNIA
3 CIVIL DIVISION

4 JAMES MILLER, et al., : NO. 3:19-CV-1537-BEN-JLB
5 Plaintiffs :
6 vs. :
7 CALIFORNIA ATTORNEY :
8 GENERAL XAVIER BECERRA, :
9 Defendants :

10 DEPOSITION OF EMANUEL KAPELSOHN

11 Taken in the offices of Veritext,
12 LLC, 4949 Liberty Street, Suite 200, Allentown,
13 Pennsylvania, on Friday, January 8, 2021, commencing
14 at 2:21 p.m., before Suzanne L. E. Toto, Registered
15 Professional Reporter and Jacob Uscinowicz,
16 Videographer.

17 APPEARANCES:

18 SEILER EPSTEIN, LLP
19 BY: GEORGE M. LEE, ESQ.
20 275 Battery Street
21 Suite 1600
22 San Francisco, CA 94111
(415) 979-0500
Gml@seilerepstein.com
-- For The Plaintiffs

23 * * *

24 VERITEXT LEGAL SOLUTIONS
25 MID-ATLANTIC REGION
4949 Liberty Lane, Suite 200
Allentown, PA 18106
(610) 434-8588

Page 1



Veritext Legal Solutions
866 299-5127

EXHIBIT

6

1 APPEARANCES: (CONTINUED)

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3 BY: JOHN DILLON, ESQ.
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5 Suite 105, No .255
6 Carlsbad, California 92009
7 760-642-7150
8 Jdillon@dillonlawgp.com
9 -- For The Plaintiffs

10 DEPUTY ATTORNEY GENERAL
11 OFFICE OF THE CALIFORNIA ATTORNEY GENERAL
12 DEPARTMENT OF JUSTICE
13 BY: JOHN D. ECHEVERRIA, ESQ.
14 455 Golden Gate Avenue
15 Suite 11000
16 San Francisco, CA 94102-7004
17 (415) 510-3479
18 John.Echeverria@doj.ca.gov
19 -- For The Defendants

20 * * *

21 VERITEXT LEGAL SOLUTIONS
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23 4949 Liberty Lane, Suite 200
24 Allentown, PA 18106
25 (610) 434-8588

Page 2

I N D E X

WITNESSES

ALL WITNESSES: PAGE:

EMANUEL KAPELSOHN:

Direct Examination by MR. ECHEVERRIA 5:10
Cross-Examination by MR. LEE 178:15
Redirect Examination by MR. ECHEVERRIA 200:12

EXHIBITS

NO.: DESCRIPTION: PAGE:

Exhibit 1 Amended Deposition Notice:
For Identification 10:13

Exhibit 2 Printout from Westlaw of
California Penal Code Section
30515:
For Identification 25:1

Exhibit 3 Printout of Links to
Featureless Rifles:
For Identification 74:20

Exhibit 4 Printout from IWI Website:
For Identification 91:23
For Identification 95:7

Exhibit 5 Printout from Pew Pew Tactical:
For Identification 202:25

Page 3

1 THE VIDEOGRAPHER: Good afternoon. We 14:20:09
2 are now on record at approximately 2:21 p.m. eastern 14:20:13
3 time on Friday, January 8th, 2020 [SIC]. This is 14:20:17
4 Media Unit Number 1 of the video recorded deposition 14:20:20
5 of Emanuel Kapelsohn, in the matter of Miller, James, 14:20:23
6 et al V Becerra, Xavier, et al. 14:20:28

7 This deposition is being held at 14:20:31
8 Allentown, PA, 4949 Liberty Lane, 200. My name is 14:20:37
9 Jacob Uscinowicz from the firm Veritext, and I'm the 14:20:40
10 videographer. The court reporter is Suzanne Toto 14:20:44
11 from the firm Veritext. 14:20:45

12 I'm not authorized to administer an 14:20:47
13 oath. I am not related to any party in this action, 14:20:49
14 nor am I financially interested in the outcome. 14:20:51

15 Counsel and all parties present in the 14:20:54
16 room, and everyone attending remotely, will now state 14:20:56
17 their appearances and affiliations for the record. 14:20:58

18 If there are any objections to 14:21:00
19 proceeding, please state them at the time of your 14:21:02
20 appearance, beginning with the noticing attorney. 14:21:06

21 MR. ECHEVERRIA: This is John 14:21:07
22 Echeverria, Deputy Attorney General. I represent the 14:21:10
23 Defendants. 14:21:12

24 MR. LEE: This is George Lee with the 14:21:14
25 firm of Seiler Epstein, LLP in San Francisco, 14:21:16

1 California. I represent the Plaintiffs. 14:21:19

2 MR. DILLON: This is John Dillon, 14:21:23

3 Dillon Law Group APC, counsel for Plaintiffs. 14:21:30

4 THE VIDEOGRAPHER: Will the court 14:21:31

5 reporter please swear in the witness. 14:21:42

6 * * * 14:21:42

7 EMANUEL KAPELSOHN, having been duly 14:21:42

8 sworn, was examined and testified as follows: 14:21:42

9 * * * 14:21:42

10 DIRECT EXAMINATION 14:21:42

11 BY MR. ECHEVERRIA: 14:21:42

12 Q. Good morning. My name is John 14:21:44

13 Echeverria. I'm a deputy attorney general with the 14:21:45

14 California Department of Justice, and I represent the 14:21:48

15 Defendants in this case, Miller versus Becerra. 14:21:51

16 This is a case that is challenging the 14:21:52

17 Constitutionality under the Second Amendment of 14:21:55

18 California's Assault Weapons Control Act. And I'm 14:21:58

19 going to be asking you some questions today about 14:22:00

20 this case. 14:22:00

21 Can you please state your name for the 14:22:02

22 record? 14:22:02

23 A. Emmanuel Kapelsohn. 14:22:06

24 Q. Have you been -- have you ever been 14:22:08

25 deposited before, Mr. Kapelsohn? 14:22:10

1	A.	Many times.	14:22:11
2	Q.	How many times?	14:22:13
3	A.	I don't know. I would imagine more than	14:22:20
4		50.	14:22:24
5	Q.	Okay. So you're -- so you're fairly	14:22:25
6		familiar with the general rules in depositions?	14:22:26
7	A.	Yes.	14:22:30
8	Q.	And even though you're familiar with	14:22:32
9		depositions and you have been deposed many times	14:22:34
10		before, I'm just going to briefly provide an overview	14:22:37
11		of the rules that will be governing this deposition,	14:22:40
12		if that's okay?	14:22:41
13	A.	Certainly.	14:22:43
14	Q.	So you have taken an oath to tell the	14:22:46
15		truth under -- under a penalty of perjury, is that	14:22:48
16		right?	14:22:48
17	A.	Yes.	14:22:48
18	Q.	And you understand that even though we	14:22:50
19		are in a -- a very informal setting, by doing this	14:22:52
20		deposition over video, that the oath that you took	14:22:55
21		has the same sanctity and same significance as the	14:22:59
22		oath that you would take in a Court of law.	14:23:01
23		Do you understand that?	14:23:02
24	A.	I fully understand that.	14:23:04
25	Q.	And you understand that it's important	14:23:05

1 that we don't speak over each other, so that the 14:23:09
2 court reporter can take down a clear record of your 14:23:11
3 deposition. 14:23:12

4 Do you understand that? 14:23:13

5 A. Yes. 14:23:14

6 Q. Great. 14:23:15

7 And you also understand that either 14:23:17
8 Mr. Lee or Mr. Dillon, who are counsel for the 14:23:21
9 Plaintiffs, may interpose objections to the form of 14:23:24
10 my questions. So it may be a good idea to provide 14:23:28
11 some time for potential objections to be -- to be 14:23:31
12 made. 14:23:31

13 Do you understand that? 14:23:32

14 A. Yes. 14:23:34

15 Q. And you also understand that even though 14:23:35
16 an objection may be raised to the form of the 14:23:38
17 questions that I'm asking you, you still will have an 14:23:41
18 obligation to answer my questions, unless you're 14:23:43
19 instructed by the Plaintiffs' attorneys to not answer 14:23:47
20 the question. 14:23:47

21 Do you understand that? 14:23:49

22 A. Yes. 14:23:50

23 Q. Great. 14:23:53

24 And I'm going to be asking you 14:23:53
25 questions from your personal knowledge. And in 14:23:56

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1 answering my questions, you should not speculate or 14:23:59
2 guess. But I am entitled to your best recollection. 14:24:03
3 And I'm also entitled to estimates where estimates 14:24:05
4 may be appropriate. 14:24:06

5 For example, if I asked you how 14:24:08
6 long the conference table is in the room that you're 14:24:11
7 in right now, you would be able to provide an 14:24:14
8 estimate of that because you can see the table. But 14:24:18
9 if I were to ask you what the estimate is of the 14:24:20
10 table that I'm sitting at, you would not be able to 14:24:23
11 provide an estimate of that. 14:24:25

12 Do you understand? 14:24:27

13 A. Yes. 14:24:30

14 Q. And if for any reason you don't 14:24:32
15 understand a question that I've asked, let me know. 14:24:35
16 I want to know that we understand each other, so that 14:24:38
17 this deposition is productive and helpful for the 14:24:41
18 Court as possible. 14:24:43

19 Do you agree? 14:24:44

20 A. Yes. 14:24:45

21 Q. Great. 14:24:48

22 And -- and if you ever, you know, 14:24:52
23 get tired or thirsty or you need to take a break, 14:24:55
24 please let me know. I don't want to exhaust you 14:24:59
25 or -- you know, I want to make sure this deposition 14:25:01

1 is as pleasant for you as possible. And also, same 14:25:04
2 goes for the court reporter. So we may be taking 14:25:07
3 breaks throughout the deposition. 14:25:08

4 Do you understand that? 14:25:09

5 A. Yes. 14:25:12

6 Q. And you also understand that at -- at the 14:25:13
7 conclusion of the deposition, you will have an 14:25:15
8 opportunity to review the transcript that the court 14:25:17
9 reporter will take down to provide any -- to provide 14:25:21
10 any changes that you may want to make. 14:25:24

11 Do you understand that? 14:25:25

12 A. Yes. 14:25:25

13 Q. And you also understand that if you do 14:25:27
14 make changes to the deposition transcript, that may 14:25:31
15 affect negatively on your credibility at trial. 14:25:34

16 Do you understand that? 14:25:35

17 A. Possibly, yes. 14:25:38

18 Q. Okay. Do you have any questions about 14:25:40
19 the procedures we are going to be using today? 14:25:43

20 A. No. 14:25:43

21 Q. Do you have any reason to feel that you 14:25:47
22 cannot -- do you have any reason to feel that you 14:25:49
23 cannot give your best testimony today? 14:25:52

24 A. No. 14:25:52

25 Q. Are you suffering from any medical 14:25:56

1	condition that would prevent you from giving your	14:25:58
2	best testimony today?	14:26:00
3	A. No.	14:26:00
4	Q. Are you taking any medications that may	14:26:01
5	prevent you from giving your best testimony today?	14:26:05
6	A. No.	14:26:06
7	Q. I'm going to mark as Kapelsohn Exhibit 1	14:26:11
8	the deposition notice that was served on you	14:26:16
9	yesterday. It's an amended deposition notice. And I	14:26:21
10	will try to show this to you on Zoom.	14:26:24
11	A. I -- I have a copy of it right in front	14:26:26
12	of me.	14:26:27
13	(Kapelsohn Exhibit Number 1 was	14:26:27
14	marked for identification.)	14:26:27
15	BY MR. ECHEVERRIA:	14:26:27
16	Q. Okay. It would -- it would be a good	14:26:29
17	idea for us to -- even where you do have a document	14:26:32
18	in your own possession, it would be good for us to	14:26:35
19	look at the same document at the same time. I am not	14:26:39
20	seeing an option to share my screen though.	14:26:46
21	MR. ECHEVERRIA: Let's go off the	14:26:48
22	record for a brief moment, if that's okay.	14:26:51
23	THE VIDEOGRAPHER: The time is now	14:26:52
24	approximately 2:28 p.m. We are now going off the	14:27:05
25	record.	14:27:23

1 (Off the record discussion.) 14:27:23

2 THE VIDEOGRAPHER: The time is now 14:28:50

3 approximately 2:30 p.m. We are now going back on the 14:28:54

4 record. 14:28:57

5 MR. LEE: And before we resume the 14:28:59

6 examination, I wanted to get on the record the 14:29:01

7 agreement or the arrangement to have the defense in 14:29:05

8 this matter pay Mr. Kapelsohn his ordinary fees and 14:29:10

9 rate for a testimony at deposition, which I 14:29:14

10 understand to be, if I'm correct, Mr. Kapelsohn, \$400 14:29:18

11 an hour for deposition testimony. 14:29:23

12 The Attorney General's Office is -- 14:29:25

13 or the defense in this matter has agreed to pay 14:29:29

14 Mr. Kapelsohn his fee in that regard, depending on 14:29:33

15 the length of this deposition. 14:29:36

16 I would like Mr. Echeverria to 14:29:39

17 confirm that and maybe give us an estimate as to what 14:29:42

18 the timeframe would be to -- to make that payment. 14:29:48

19 MR. ECHEVERRIA: Yeah, as -- as we 14:29:48

20 discussed off the record, the Defendants will be 14:29:51

21 compensating Mr. Kapelsohn for his testimony today. 14:29:55

22 The procedure for doing that would be for 14:29:57

23 Mr. Kapelsohn or -- through Plaintiff's counsel 14:30:00

24 invoice the California Attorney General's Office for 14:30:05

25 the deposition services with a breakdown of the 14:30:07

1 costs. 14:30:09

2 And there is a formal process for 14:30:11

3 payment of those invoices. It's handled by parts of 14:30:17

4 the Department of Justice that I am just not familiar 14:30:20

5 with. So I can't tell you how long it would take, 14:30:24

6 but it -- the invoice will be processed as any other 14:30:28

7 invoice that is processed and paid by the State of 14:30:32

8 California. Is that -- is that satisfactory? 14:30:35

9 MR. LEE: Understood. Yes. Thank 14:30:37

10 you very much. And go ahead and proceed with your 14:30:40

11 examination. 14:30:40

12 MR. ECHEVERRIA: Great. Thank you. 14:30:42

13 BY MR. ECHEVERRIA: 14:30:42

14 Q. Mr. Kapelsohn, I -- I have marked as 14:30:44

15 Kapelsohn Exhibit 1 the amended notice of deposition 14:30:48

16 of Emanuel Kapelsohn, which was emailed to 14:30:53

17 Plaintiff's counsel yesterday. I am going to -- I am 14:30:57

18 going to scroll through this document for you. 14:31:00

19 Have you seen this document before? 14:31:02

20 A. I have, yes. 14:31:08

21 Q. I am going to refer you to Attachment A 14:31:10

22 to Kapelsohn Exhibit 1, which is a list of three 14:31:14

23 individual requests for documents. 14:31:16

24 Do you see those three requests -- 14:31:19

25 A. Yes. 14:31:19

1 Q. -- on lines 15 to 23 of Page 3 of 14:31:22
2 Kapelsohn Exhibit 1? 14:31:25
3 A. Yes. 14:31:26
4 Q. Did you discuss with Plaintiff's counsel 14:31:27
5 the individual requests for documents that are 14:31:30
6 provided there? 14:31:31
7 A. I did. 14:31:34
8 Q. And you provided eight documents earlier 14:31:37
9 today, in response to those documents requests, is 14:31:43
10 that correct? 14:31:44
11 A. I believe it's eight. I can -- I can 14:31:49
12 count them. 14:31:51
13 Q. It's okay. 14:31:52
14 And the documents that you produced 14:31:54
15 today were in response to individual requests Number 14:32:01
16 2 on Page 3 of Kapelsohn Exhibit 1, is that correct? 14:32:12
17 A. Yes. 14:32:12
18 Q. So these were reports or declarations or 14:32:16
19 similar types of documents that you have submitted in 14:32:18
20 other litigation, is that right? 14:32:21
21 A. Correct. 14:32:26
22 Q. And what was the nature of the cases that 14:32:27
23 you provided testimony -- pardon me. Let me rephrase 14:32:33
24 that. 14:32:34
25 In the cases that you provided 14:32:36

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1 testimony for the documents that you produced today, 14:32:42
2 what were those cases concerning? 14:32:45
3 A. Well, I haven't provided testimony in all 14:32:47
4 of those cases yet. Some are still ongoing. I 14:32:50
5 provided reports to you, expert reports. And -- so 14:32:54
6 it's not testimony. It's my reports. And I -- 14:33:01
7 Q. Did you -- 14:33:03
8 A. Shall I finish? 14:33:04
9 Q. Sorry. 14:33:05
10 A. Okay. 14:33:07
11 Q. You may finish. But just to clarify, 14:33:09
12 when I say testimony, I'm not solely referring to 14:33:11
13 oral testimony. 14:33:13
14 Were those documents signed under 14:33:17
15 penalty of perjury? 14:33:18
16 A. No. They are expert reports, sir. They 14:33:21
17 are not testimony. They are not testimony. 14:33:24
18 Q. All right. So you -- 14:33:26
19 A. Excuse me? 14:33:27
20 Q. Very good. 14:33:30
21 A. So -- 14:33:30
22 Q. Very good. I understand your answer. 14:33:33
23 A. So the -- the question was, then why did 14:33:37
24 I select these or what is the basis on which I picked 14:33:41
25 these? These were cases -- 14:33:42

1 Q. I didn't ask you those questions. 14:33:45

2 A. Well, you did a few minutes ago, but go 14:33:48

3 right ahead, sir. 14:33:50

4 Q. It's okay. 14:33:51

5 So you provided expert reports in 14:33:54

6 connection with certain cases, is that correct? 14:33:57

7 A. Yes. 14:33:58

8 Q. What did those cases concern? 14:34:02

9 A. Those cases concerned shootings, and 14:34:06

10 without looking through them all, I would say that 14:34:10

11 most, if not all of them, were police officer 14:34:12

12 involved shootings. And they are shootings in which 14:34:17

13 AR-15 rifles were involved. 14:34:21

14 And the nature of your request 14:34:25

15 issues or topics, similar to those on which I 14:34:29

16 provided opinions in this case, I've provided a lot 14:34:31

17 of opinions about AR-15 rifles. 14:34:35

18 And so some of these reports have 14:34:38

19 things in them that, I think, are directly mirroring 14:34:42

20 my testimony in -- in this case or -- or my 14:34:45

21 declaration in this case. Others just have to do 14:34:50

22 with AR-15 rifles in one way or another, but I wanted 14:34:54

23 to make sure to give you everything that I could 14:34:56

24 think of that -- that might arguably be responsive to 14:34:59

25 your Number 2. 14:35:00

1 Q. Okay. I appreciate that. 14:35:03

2 Are there any other cases that you 14:35:05

3 provided expert reports in that may have involved 14:35:08

4 other rifles other than the AR-15, that would also 14:35:12

5 qualify as assault weapons in your understanding 14:35:14

6 under California law? 14:35:25

7 A. You know, I've worked as an expert 14:35:28

8 witness now for 37 years, so you're asking me quite a 14:35:32

9 memory test. But I can think of one case in Atlantic 14:35:40

10 County, New Jersey that I believed -- believe 14:35:46

11 involved an AK-47 rifle, although whether it has 14:35:53

12 anything to do with the issues in this case or not, I 14:35:56

13 don't know. 14:35:56

14 It's some years ago. I didn't 14:35:59

15 think of that one. I don't know whether I can still 14:36:01

16 access an expert report from that case or not. I 14:36:06

17 think I -- I think I probably wrote one. I'm not 14:36:08

18 sure. 14:36:10

19 Q. Thank you. 14:36:12

20 In the eight -- in the -- in the 14:36:16

21 cases for which you provided expert reports that you 14:36:19

22 have produced today, did you -- did you provide the 14:36:23

23 expert reports on behalf of the law enforcement 14:36:27

24 officer or on behalf of the Plaintiffs in those 14:36:30

25 cases? 14:36:31

1 A. It's -- in some cases it was neither. 14:36:40

2 Q. Can you please explain. 14:36:40

3 A I -- I wrote the reports at the direction 14:36:44

4 of counsel that engaged me in those cases. Sometimes 14:36:47

5 they were municipalities that were being sued by 14:36:51

6 individuals claiming excessive use of police force 14:36:55

7 under Section 1983. 14:36:59

8 Sometimes these were criminal 14:36:59

9 cases, I think. If you want me to look at each one 14:37:02

10 of them, I can tell you the answer. But the -- but 14:37:05

11 the -- the general answer is, in some cases, I think 14:37:07

12 the answer is neither. 14:37:11

13 Q. Okay. And when you're -- and when you're 14:37:15

14 providing expert reports on behalf of a municipality, 14:37:17

15 that would be where the municipality is being sued 14:37:22

16 vicariously for the use of force of the officer that 14:37:26

17 they employ, is that right, roughly? 14:37:29

18 A. Generally, yes. 14:37:31

19 Q. Okay. And in those types of cases, you 14:37:35

20 would be providing expert services to the Defendant 14:37:38

21 or Defendants, is that right? 14:37:41

22 A. Yes. Yes. Although I have worked on the 14:37:44

23 other side of such cases as well. So if you want 14:37:51

24 a -- if you want a general -- I don't -- I don't know 14:37:51

25 whether you're asking me a general question or about 14:37:54

1	these eight reports that I have provided.	14:37:56
2	Q. Well, I want you to answer the questions	14:37:59
3	that I'm asking. And I'm not asking specifically	14:38:01
4	about the eight reports necessarily. I was asking,	14:38:04
5	generally, when you were -- when you were providing	14:38:06
6	expert services to a municipality in these types of	14:38:11
7	cases, that would be providing services to a	14:38:13
8	Defendant, right?	14:38:24
9	A. It's -- I believe the answer is, yes.	14:38:31
10	And the reason I'm struggling with it is, sometimes,	14:38:35
11	for instance right now, I'm working in a case for the	14:38:39
12	city of Nashville, but -- but it's actually a	14:38:45
13	prosecution of a police officer for excessive use of	14:38:49
14	force. So -- so it may be ultimately the State of	14:38:54
15	Tennessee versus someone, but it's the City of	14:38:58
16	Nashville that has hired me.	14:39:00
17	So it's not -- so they are not a	14:39:02
18	Defendant in that case. They are the prosecution in	14:39:05
19	that case.	14:39:06
20	Q. I understand.	14:39:07
21	As a general matter, have you	14:39:11
22	testified more for a Plaintiff suing either a	14:39:16
23	municipality or a police officer, or have you -- or	14:39:20
24	have you provided services more -- let me -- let me	14:39:22
25	ask this question once again. It's a little	14:39:25

1 difficult for me to articulate the question. 14:39:28

2 So have you provided more expert 14:39:35

3 services to Plaintiffs doing municipalities or law 14:39:41

4 enforcement officers in excessive force cases, than 14:39:44

5 you have for Defendants who are being sued in those 14:39:48

6 cases? 14:39:48

7 A. If -- if I understand your question, I 14:39:55

8 think I -- in -- in -- in civil cases for excessive 14:39:59

9 use of force by police, I have more often worked for 14:40:03

10 the defense than for the Plaintiffs. 14:40:07

11 Q. Thank you. 14:40:08

12 And I -- I also want to clarify 14:40:09

13 that if you don't understand a question that I'm 14:40:11

14 asking, and I guarantee you that that will happen at 14:40:15

15 some points during this deposition, it may have 14:40:16

16 already happened, you know, please let me know. I 14:40:20

17 will try, you know, to the best I can, to phrase my 14:40:23

18 question in a way that is helpful for you. But if 14:40:25

19 you do answer a question, it will be understood that 14:40:27

20 you -- that you understood what I was asking. 14:40:30

21 Does that make sense? 14:40:32

22 A. Yes. 14:40:33

23 Q. Thank you. 14:40:34

24 So regarding Kapelsohn Exhibit 1, 14:40:40

25 the Attachment A on Page 3 of that exhibit, there are 14:40:44

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1 three individual requests for documents. Did you 14:40:47
2 produce any documents in connection with the first 14:40:50
3 request for all non-privileged documents, data or 14:40:53
4 information in electronic form that you received, 14:40:55
5 reviewed or relied upon in forming your opinions in 14:40:58
6 this litigation? 14:40:59

7 A. I didn't produce any because all of the 14:41:04
8 documents that I reviewed were things sent to me by 14:41:09
9 counsel, and he assured me that you had them, also. 14:41:13
10 Such as the declaration of Blake Graham, and the 14:41:18
11 California statute that is in question, and the -- my 14:41:24
12 own declaration, which you've received, and the 14:41:27
13 regulations under the statute. 14:41:29

14 So I didn't -- I didn't understand 14:41:33
15 any need to provide additional copies because you 14:41:36
16 already have them and counsel agreed with that. 14:41:41

17 Q. Okay. So just to be clear, you did not 14:41:43
18 review any documents, other than those that were 14:41:47
19 filed in connection with this case? 14:41:50

20 A. The only things that I reviewed, other 14:41:54
21 than what has been filed -- and I don't know if it's 14:41:57
22 been filed or not -- but when I asked counsel whether 14:42:03
23 he could show me a picture or two of AR-15s that 14:42:16
24 are -- I forget what the term is -- that -- they are 14:42:19
25 ones that do not have the features that would make 14:42:23

1 them objectionable under the California Assault 14:42:30
2 Weapon Law. 14:42:32
3 There's -- there is a term that is 14:42:33
4 used and it's escaping me right now. But he -- 14:42:39
5 Q. Would the term be -- would the term be 14:42:41
6 featureless? 14:42:41
7 A. Featureless, that's correct. Thank you. 14:42:44
8 And he sent -- 14:42:44
9 Q. Sorry for interrupting you, but I thought 14:42:46
10 that would be helpful. 14:42:47
11 A. That is helpful. And he sent me, I 14:42:50
12 think, two or three pictures of featureless AR-15s so 14:42:55
13 that I would understand what that term meant. 14:42:58
14 And I said to him, if that is 14:43:00
15 something that needs to be produced to you, I would 14:43:04
16 count on him to produce that to you. I -- so I don't 14:43:07
17 know whether those things have been included in 14:43:10
18 filings with the Court in this case or not. 14:43:14
19 Q. I don't know whether those particular 14:43:15
20 documents have been filed either, but they were not 14:43:20
21 produced in connection with our document requests in 14:43:25
22 Kapelsohn Exhibit 1. 14:43:27
23 MR. ECHEVERRIA: So I would ask 14:43:28
24 Plaintiff's counsel to provide any and all of those 14:43:32
25 documents to me at some point in the next day or so. 14:43:36

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1 MR. LEE: I will -- I will do that 14:43:37
2 at our next break. That's not a problem. I just 14:43:40
3 basically sent Mr. Kapelsohn an email yesterday that 14:43:43
4 had some examples of California featureless AR-15 14:43:59
5 style rifles. But I will make that available to you 14:44:03
6 at the next break. 14:44:06
7 MR. ECHEVERRIA: Thank you very 14:44:07
8 much, Mr. Lee. 14:44:08
9 BY MR. ECHEVERRIA: 14:44:08
10 Q. And so when I say a -- when I refer to a 14:44:10
11 featureless rifle, Mr. Kapelsohn, you understand what 14:44:13
12 I'm referring to? 14:44:15
13 A. Yeah, in general, yes, I do. 14:44:19
14 Q. Okay. And they also use the phrase 14:44:21
15 California compliant, which would be a synonym for a 14:44:25
16 featureless weapon. 14:44:27
17 Do you understand that as well? 14:44:28
18 A. Yes, sir. 14:44:28
19 Q. Thank you. 14:44:31
20 What did you do to prepare for this 14:44:34
21 deposition today? 14:44:37
22 A. I reread my own declaration in this case. 14:44:44
23 I reread the Assault Weapon Statute that is at issue 14:44:49
24 in this case. I looked at the regulations under that 14:44:56
25 statute. I looked at my testimony at the hearing in 14:45:05

1 San Diego. I looked very briefly at Blake Graham's 14:45:12
2 declaration. I didn't have time to go through the 14:45:15
3 whole thing. And I looked at the deposition notice 14:45:26
4 and amended deposition notice. And then I spoke with 14:45:33
5 George Lee yesterday for, oh, I think it was about an 14:45:36
6 hour and a half in preparation. 14:45:41
7 Q. And you reviewed the first amended 14:45:43
8 complaint in this case? 14:45:47
9 A. I may have, but not -- not immediately in 14:45:50
10 preparation for this deposition. If I -- if I looked 14:45:53
11 at it, it was back before the hearing in San Diego. 14:45:56
12 Q. Sure. 14:45:59
13 Did you have any role in drafting 14:46:01
14 the first amended complaint? 14:46:03
15 A. Oh, no. 14:46:04
16 Q. You had no role in drafting any pleadings 14:46:07
17 in this case? 14:46:08
18 A. Not that I know of. 14:46:17
19 Q. Did you have any role in preparing the 14:46:19
20 Plaintiff's Preliminary Injunction Motion, beyond 14:46:21
21 preparing the declaration that you submitted? 14:46:23
22 A. I don't think so. 14:46:24
23 THE VIDEOGRAPHER: The time is now 14:46:26
24 approximately 2:47 p.m. We need to go off the record 14:46:30
25 for technical issues. 14:46:49

1	(Off the record discussion.)	14:46:49
2	THE VIDEOGRAPHER: The time is now	14:49:10
3	approximately 2:50 p.m. We are now going back on the	14:49:13
4	record.	14:49:15
5	BY MR. ECHEVERRIA:	14:49:15
6	Q. Mr. Kapelsohn, you understand that	14:49:16
7	Plaintiffs in this case are challenging California's	14:49:19
8	Assault Weapons Control Act, is that right?	14:49:22
9	A. Yes.	14:49:25
10	Q. And you understand Assault Weapons	14:49:26
11	Control Act defines certain firearms as assault	14:49:30
12	weapons under California law?	14:49:32
13	A. Yes.	14:49:33
14	Q. And you understand that there are other	14:49:34
15	provisions that the California Assault Weapons	14:49:35
16	Control Act, and perhaps other provisions of the	14:49:39
17	penal code, that apply to firearms that are	14:49:44
18	designated as assault weapons.	14:49:47
19	Do you understand that?	14:49:48
20	A. I assume so.	14:49:49
21	Q. Okay. I'm going to mark as Kapelsohn	14:49:51
22	Exhibit 2 a document that you testified that you've	14:49:55
23	already looked at.	14:49:57
24	Can you see this document?	14:49:59
25	A. Yes, I can.	14:50:00

1	(Kapelsohn Exhibit Number 2 was	14:50:00
2	marked for identification.)	14:50:00
3	BY MR. ECHEVERRIA:	14:50:00
4	Q. Kapelsohn Exhibit 2 is a printout from	14:50:03
5	Westlaw of California Penal Code Section 30515, which	14:50:10
6	defines assault weapons. And you have reviewed this	14:50:13
7	statute before?	14:50:16
8	A. Yes.	14:50:18
9	Q. And you can see that it's -- at Section	14:50:20
10	30515(a)(1), there are several features that are	14:50:26
11	listed that would qualify a semiautomatic, centerfire	14:50:29
12	rifle without a fixed magazine as an assault weapon.	14:50:34
13	Do you see those?	14:50:35
14	A. Yes.	14:50:36
15	Q. What is a semiautomatic rifle?	14:50:38
16	A. A semiautomatic rifle is a rifle that	14:50:44
17	with each pull of the trigger fires, extracts and	14:50:51
18	ejects the fired case, and then feeds and chambers a	14:50:57
19	live round of ammunition, provided there is	14:51:02
20	ammunition in the weapon, without any mechanical	14:51:06
21	operation by the user, other than that pulling of the	14:51:11
22	trigger.	14:51:11
23	Oh, and --	14:51:18
24	Q. What is a --	14:51:18
25	A. Excuse me. And -- and you said rifle, so	14:51:20

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1 it is a shoulder weapon rather than a handgun or a 14:51:24
2 shotgun. It's a shoulder weapon with a rifled 14:51:28
3 barrel. 14:51:28
4 Q. And what is a fully automatic rifle? 14:51:33
5 A. A fully automatic rifle is one where as 14:51:37
6 it -- it fits the same features I've just described, 14:51:42
7 except that as long as the trigger is held depressed, 14:51:47
8 it continues to fire, you know, shot after shot, 14:51:52
9 until either the trigger is released or until the 14:51:56
10 ammunition supply is expended. 14:51:59
11 So in other words, it's what the 14:52:00
12 public commonly calls a machine gun. 14:52:03
13 Q. Or until the weapon malfunctions, right? 14:52:06
14 A. Yes. 14:52:08
15 Q. What is a select fire rifle? 14:52:10
16 A. A select fire rifle is one which can be 14:52:14
17 fired either semiautomatically or fully 14:52:18
18 automatically, based on the positioning of what is 14:52:23
19 commonly called a selector switch or selector lever. 14:52:28
20 Q. Are some select fire rifles capable of 14:52:32
21 firing in what is referred to as burst mode? 14:52:36
22 A. They are. 14:52:37
23 Q. What is burst mode? 14:52:39
24 A. In -- in burst mode, the rifle, when the 14:52:45
25 trigger is pressed, will fire two or three or four 14:52:51

1 shots as a burst, fully automatically, but will stop 14:52:56
2 after that burst and then the trigger must be 14:52:59
3 released and depressed again to fire the next burst. 14:53:05
4 Q. Are there any other firing modes that a 14:53:07
5 rifle can have, other than semiautomatic or select 14:53:11
6 fire? Let me rephrase. 14:53:17
7 A. Well, it -- 14:53:18
8 Q. If you're confused, I will rephrase my 14:53:20
9 question. 14:53:21
10 A. Your question is confusing. I can answer 14:53:23
11 your question. 14:53:25
12 Q. Then answer my question, please. 14:53:26
13 A. Yes. You said, other than semiautomatic 14:53:28
14 or burst firing or select -- I think you said, 14:53:32
15 semiautomatic or select fire. 14:53:35
16 Q. Yes. 14:53:35
17 A. There are fully automatic rifles. There 14:53:38
18 may be some in the world that are only fully 14:53:40
19 automatic, that don't have a selector switch for 14:53:44
20 semiautomatic fire. 14:53:45
21 And then, by the nature of your 14:53:47
22 question, there are all kinds of other rifles. There 14:53:50
23 are single-shot rifles, lever-action rifles, 14:53:53
24 pump-action rifles, bolt-action rifles, hinge-action 14:53:57
25 rifles. 14:53:58

1 Q. Are there any other type of actions for 14:54:00
2 rifles? 14:54:01
3 A. I'm sure there are. There are 14:54:04
4 falling-block rifles. There are muzzle-loading 14:54:07
5 rifles. There are many kinds of mechanisms. Rifles 14:54:11
6 have existed since the 1600s, at least, maybe 14:54:14
7 earlier. 14:54:15
8 Q. And you understand that California Penal 14:54:18
9 Code Section 30515, which is Kapelsohn Exhibit 2, 14:54:23
10 Subdivision (a)(1) applies to only semiautomatic 14:54:28
11 rifles. 14:54:29
12 Is that your understanding? 14:54:30
13 A. It says semiautomatic, centerfire rifles, 14:54:35
14 so it's even more restricted than just semiautomatic. 14:54:37
15 Q. Thank you. We -- we will be getting to 14:54:38
16 the centerfire soon. I just wanted to take it one 14:54:41
17 step at a time -- at a time. 14:54:43
18 Let's move on to centerfire. What 14:54:45
19 is a centerfire rifle? 14:54:48
20 A. The two most common classifications of 14:54:50
21 ammunition -- cartridge ammunition rimfire and 14:55:00
22 centerfire. In rimfire, the priming compound is 14:55:05
23 contained within the rim of the cartridge case, and 14:55:09
24 the hammer, or firing pin or striker, hits and 14:55:14
25 crushes the rim of the cartridge case, and that's 14:55:16

1	what fires the cartridge.	14:55:18
2	In centerfire cartridges, there is	14:55:22
3	a primer in the center of the head of the cartridge,	14:55:25
4	head, meaning what someone might think of as the base	14:55:28
5	of the cartridge. But the -- technically, it's	14:55:30
6	called the head of the cartridge case. A -- a primer	14:55:33
7	in the center of it, and -- and that's where the	14:55:36
8	firing pin or striker hits to fire the cartridge. So	14:55:40
9	those are called centerfire cartridges.	14:55:43
10	Q. Are centerfire cartridges generally more	14:55:47
11	powerful than rimfire cartridges?	14:55:52
12	A. Generally, yes, but it's -- it's not	14:55:54
13	necessarily the case.	14:55:59
14	Q. When would it not be the case?	14:56:01
15	A. When they are not more powerful.	14:56:03
16	Q. Do you have any examples in which a	14:56:06
17	rimfire round may not be more powerful than a	14:56:11
18	centerfire round?	14:56:13
19	A. Well --	14:56:13
20	Q. Or -- or is it just a hypothetical that	14:56:16
21	you're posing?	14:56:17
22	A. No. You know, there have been thousands	14:56:20
23	and thousands of different cartridges developed over	14:56:23
24	the years. First of all, I'm not sure I have all of	14:56:27
25	them in mind. I'm sure I don't have all of them in	14:56:30

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1 mind at the moment. But for instance, there's the 22 14:56:33
2 rimfire Magnum and the .17 Caliber HMR rimfire, and 14:56:44
3 both of those are fairly fast cartridges. Meaning, 14:56:48
4 the projectile moves fast. 14:56:51

5 And the kinetic energy of a 14:56:55
6 projectile is calculated by a formula that uses the 14:57:01
7 square of the projectile's velocity. So velocity is 14:57:07
8 very highly rated in determining the kinetic energy 14:57:10
9 of a cartridge. 14:57:12

10 My belief is that those rimfire 14:57:14
11 cartridges may exceed the power of some of the 14:57:20
12 smaller centerfire cartridges. 14:57:23

13 Also, the time -- back in the 1800s 14:57:26
14 time of the Riverboat Gamblers and on into the 1900s, 14:57:30
15 there were things like the .41 Caliber rimfire that 14:57:34
16 was a -- a Derringer cartridge, used in Remington and 14:57:38
17 other Derringers. And I believe that was probably 14:57:41
18 more powerful than some of the smaller centerfire 14:57:44
19 cartridges, even though the .41 was a rimfire 14:57:48
20 cartridge. 14:57:50

21 So there are examples, and there 14:57:51
22 are probably others. As I say, there have been 14:57:54
23 thousands of cartridges. 14:57:55

24 Q. Sure. 14:57:56

25 But as a general proposition, a 14:57:58

1 centerfire cartridge is going to be more powerful 14:58:00
2 than a rimfire cartridge? 14:58:02
3 A. Usually so, yes. 14:58:06
4 Q. And if we turn back to Kapelsohn Exhibit 14:58:09
5 2, there are other definitions that apply to rifles 14:58:13
6 that would qualify as a -- a rifle as an assault 14:58:16
7 weapon. 14:58:16
8 In Subdivision (a)(2), it defines 14:58:19
9 an assault weapon as a semiautomatic centerfire rifle 14:58:22
10 that has a fixed magazine with the capacity to accept 14:58:25
11 more than ten rounds. 14:58:26
12 Do you see that provision, sir? 14:58:29
13 A. I do. 14:58:30
14 Q. What is a fixed magazine, in your 14:58:32
15 understanding? 14:58:32
16 A. A fixed magazine is opposed to a 14:58:36
17 detachable magazine. The most detach -- the most 14:58:40
18 common detachable magazines are what are called 14:58:44
19 detachable box magazines. They are what are used in 14:58:47
20 most semiautomatic pistols and -- and many 14:58:50
21 semiautomatic rifles and some semiautomatic -- 14:58:55
22 some -- some shotguns, pump-action and semiautomatic 14:58:57
23 as well. 14:58:57
24 And those are box shaped, 14:59:01
25 rectangular generally. Magazines that have a spring 14:59:05

1 mechanism in them, and you put cartridges in them. 14:59:08
2 And then you insert that magazine into a firearm. 14:59:12
3 And as you fire the firearm, the spring in the 14:59:15
4 magazine pushes one cartridge after another into 14:59:20
5 position to be fed and chambered from it. So that's 14:59:23
6 a detachable magazine. 14:59:25
7 There are also semiautomatic rifles 14:59:28
8 that do not have detachable boxed magazines. That 14:59:33
9 have fixed box magazines, where the magazine is a 14:59:37
10 fixed part of the weapon. It cannot be detached. 14:59:41
11 Q. Understood. We will be returning -- we 14:59:46
12 will be returning to Kapelsohn Exhibit 2 throughout 14:59:47
13 the deposition. I think it would be good to have the 14:59:50
14 statute in front of us, when we are discussing 14:59:51
15 particular features or characteristics of the weapon. 14:59:55
16 I am going to move on to the 14:59:56
17 declaration that you submitted in this case. This is 15:00:02
18 Plaintiff's Exhibit 1. 15:00:05
19 Can you see Plaintiff's Exhibit 1, 15:00:07
20 sir? 15:00:07
21 A. I can. 15:00:09
22 Q. Plaintiff's Exhibit 1 is the declaration 15:00:11
23 of Emanuel Kapelsohn in support of Plaintiff's Motion 15:00:13
24 for a Preliminary Injunction in this case, docket 15:00:18
25 number 22-12. If we turn to the -- not the last page 15:00:23

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1 of the exhibit, but it would be Page 21 of 15:00:26
2 Plaintiff's Exhibit 1. 15:00:27
3 Do you see the signature above the 15:00:29
4 name, Emmanuel Kapelsohn? 15:00:31
5 A. I do. 15:00:31
6 Q. Is that your signature? 15:00:33
7 A. Yes, sir. 15:00:33
8 Q. And you executed this document on 15:00:36
9 December 5th of -- of 2019? 15:00:40
10 A. I believe so because that's the date 15:00:42
11 written on it. I don't have a recollection, as I sit 15:00:44
12 here, of what day I executed, but I would have to 15:00:47
13 believe it was December 5th. 15:00:51
14 Q. You have no reason to believe that it 15:00:53
15 would not be December 5th, is that right? 15:00:55
16 A. That's correct. 15:00:58
17 Q. In what city did you execute this 15:01:01
18 document? 15:01:10
19 A. My declaration on December 5th -- 15:01:17
20 Q. 2019. 15:01:17
21 A. I -- I -- I believe, most likely, it was 15:01:21
22 in Fogelsville, Pennsylvania, which is where my home 15:01:26
23 office is. But I can't swear to that for a fact. 15:01:28
24 I'm not positive, but I would -- would think that's 15:01:31
25 where I was. 15:01:32

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1 Q. Mr. Kapelsohn, if you can't recall an 15:01:34
2 answer, it's -- it's fine to say that you -- you 15:01:38
3 can't recall. I'm not -- I'm not holding your feet 15:01:41
4 to the fire on this. I was just asking you a 15:01:44
5 question. If you don't know the answer, you can let 15:01:45
6 me know, okay? 15:01:46
7 A. I believe -- yes, I appreciate that. I 15:01:48
8 believe, it -- it, in all likelihood, was in 15:01:50
9 Fogelsville, Pennsylvania or possibly Allentown, 15:01:55
10 which is where my other -- my home office is in 15:01:59
11 Fogelsville. My other office is in Allentown. I 15:02:02
12 would have to believe it was at one or the other of 15:02:05
13 those places. 15:02:05
14 Q. Very good. 15:02:07
15 When did you first become involved 15:02:08
16 in this case, approximately? 15:02:14
17 A. I'd -- I'd have to look back at files to 15:02:21
18 determine that. I -- I can't tell you that as I sit 15:02:23
19 here. It's certainly within the last two years, but 15:02:26
20 exactly when, I can't tell you. 15:02:32
21 Q. Who contacted you about getting involved 15:02:33
22 in this case? 15:02:37
23 A. I believe it was George Lee, but I'm not 15:02:39
24 positive that he was the first one who contacted me. 15:02:44
25 Q. Do you know whether Mr. Lee contacted you 15:02:46

1 before the original complaint was filed in this case, 15:02:49
2 on October -- I'm sorry, on August 15th, 2019? 15:02:56
3 A. Not without looking back at my files. I 15:03:05
4 would need to look at, you know, things like emails 15:03:07
5 and billing records and so forth, to see exactly when 15:03:10
6 I was first contacted or when I was first engaged. 15:03:13
7 Q. When you were first engaged in this case, 15:03:17
8 were the Plaintiffs challenging only the provisions 15:03:22
9 of the Assault Weapons Control Act regarding rifles 15:03:25
10 and pistols that have fixed magazines holding more 15:03:28
11 than ten rounds, or were you contacted by Plaintiffs' 15:03:32
12 counsel when the Plaintiffs were challenging all of 15:03:34
13 the definitions in California penal code, Section 15:03:38
14 30515? 15:03:40
15 MR. LEE: Objection. Foundation. 15:03:41
16 You can answer. 15:03:43
17 A. I don't know when they challenged one 15:03:44
18 versus the other, and I don't know the answer 15:03:47
19 accordingly. 15:03:54
20 Q. When you were asked to provide expert 15:03:55
21 services to the Plaintiffs in this case, what 15:03:58
22 services were you asked to provide in particular? 15:04:04
23 A. I was asked to analyze and comment on 15:04:14
24 prohibited features, if I can call them that, of -- 15:04:19
25 of weapons under the Assault Weapons Act and types of 15:04:22

1 weapons that were prohibited. And I was asked to 15:04:26
2 comment on -- in -- in the most general sense, 15:04:32
3 whether those features and weapons with those 15:04:36
4 features had utility for law-abiding owners and 15:04:45
5 users, utility for lawful purposes. 15:04:53
6 Q. Do you have a written agreement governing 15:04:54
7 your engagement as an expert in this case? 15:04:58
8 A. I don't know. 15:05:02
9 Q. Are you being compensated for your work 15:05:04
10 in this case? 15:05:05
11 A. I certainly hope so. 15:05:11
12 Q. Do you know how much you're being 15:05:13
13 compensated financially -- let me -- let me ask it -- 15:05:16
14 you were hoping that you were going to be compensated 15:05:18
15 in this case, is that right? 15:05:19
16 A. I -- I have been compensated to an extent 15:05:21
17 already, and I hope I continue to be compensated for 15:05:26
18 my work. 15:05:26
19 Q. Okay. And that's being compensated 15:05:28
20 financially? 15:05:29
21 A. Yes. 15:05:32
22 Q. What are the terms of your financial 15:05:34
23 compensation in this case? 15:05:41
24 A. The -- primarily, I'm compensated by the 15:05:44
25 hour for my work. When I first took on this work, I 15:05:50

1 believe it was at the rate of \$375 an hour for 15:05:56
2 preparation time, which includes writing reports and 15:05:59
3 communications with counsel and research, if any, 15:06:04
4 things like that. 15:06:05

5 There's a lower hourly rate than 15:06:08
6 that for portal to portal travel time, such as when I 15:06:14
7 came out to San Diego to testify in Federal Court. 15:06:19
8 And I think that that rate at that time was \$250 an 15:06:22
9 hour. 15:06:24

10 Since that time, my rates have gone 15:06:27
11 up, and as -- as you agreed with counsel at the 15:06:31
12 beginning of this deposition, my -- my hourly rate is 15:06:33
13 now -- I don't know if you agreed at the beginning or 15:06:36
14 not, but my hourly rate is -- is now \$400 an hour, 15:06:40
15 instead of 375. And I think the travel time rate is 15:06:45
16 275 instead of 200. 15:06:47

17 There is a daily rate that applies 15:06:50
18 to out-of-town days attending in Court or 15:06:55
19 depositions. But I believe we have agreed that for 15:06:58
20 today's deposition, because it's local, it would be 15:07:01
21 charged by the hour at my hourly rate. 15:07:07

22 Q. Approximately, how much have you been 15:07:10
23 compensated so far in this case? 15:07:16

24 A. I can tell you how much I've received, 15:07:21
25 I -- or how much I believe I have received. And I 15:07:23

1 wasn't asked to -- to bring my billing records, but 15:07:27
2 I -- I'm -- I'm answering from the best of my 15:07:29
3 recollection. 15:07:29
4 I believe I received a \$3,500 15:07:34
5 retainer at the start of the case, which is what I 15:07:39
6 always use as a retainer in -- in my cases. I -- I 15:07:48
7 think there was one bill after that point, and that 15:07:52
8 was before the -- the time of the San Diego hearing, 15:07:59
9 in which I testified. 15:08:01
10 How much that bill was, I'm not 15:08:02
11 sure. I -- I think it was in the vicinity of \$8,000, 15:08:07
12 but I really am not positive. And then, before the 15:08:11
13 time of the San Diego hearing, I was sent another 15:08:18
14 \$11,000, which I held in escrow pending it being 15:08:25
15 used. And whether that has all been used up or not, 15:08:33
16 I'm not sure. Or whether -- whether my work now will 15:08:38
17 be beyond that, I'm not sure. 15:08:42
18 Q. Thank you. 15:08:43
19 Referring back to Plaintiff's 15:08:46
20 Exhibit 1, which is the declaration that you 15:08:49
21 submitted in this case, did you write Plaintiff's 15:08:55
22 Exhibit 1 on your own? 15:08:57
23 A. Yes. 15:09:00
24 Q. Did Plaintiff's counsel author any of 15:09:02
25 Plaintiff's Exhibit 1? 15:09:05

1 A. Oh, I don't think Plaintiff's counsel 15:09:07
2 authored any of it. They may have commented on it. 15:09:11
3 I -- I usually do things in draft form first. But I 15:09:19
4 believe I wrote the text of it. I'm sure they wrote 15:09:21
5 the -- the case caption and things like that. I 15:09:25
6 didn't struggle through that. But in terms of the 15:09:27
7 text, I believe I wrote it. 15:09:32
8 Q. Thank you. What information do you rely 15:09:34
9 on in preparing Plaintiff's Exhibit 1? 15:09:41
10 A. I relied on about 63 years of experience 15:09:53
11 in using firearms of all sorts. I relied on all of 15:10:00
12 the training and experience that I state in Exhibit 1 15:10:09
13 under the section entitled, qualifications that 15:10:13
14 starts with Paragraph Number 3. 15:10:20
15 Q. Yeah, I've turned to it. 15:10:21
16 A. And goes on through, at least, Paragraph 15:10:25
17 Number 16. I rely on my knowledge of the features of 15:10:33
18 these firearms, the fact that I have owned firearms 15:10:37
19 with these features, the fact that I have trained 15:10:40
20 thousands of people to use firearms with and without 15:10:44
21 these features, all kinds of firearms, years as a 15:10:48
22 professional firearms instructor that's, at this 15:10:52
23 point, I think about 43 years of teaching experience 15:10:56
24 as a professional instructor. 15:10:59
25 My work as technical editor of 15:11:03

1 Police Marksman Magazine. My work on the board of 15:11:06
2 directors for 35 years now of the International 15:11:09
3 Association of Law Enforcement Firearms Instructors. 15:11:13
4 My continuous reading in the field. My continuous 15:11:16
5 testing and evaluation of firearms sent to me by 15:11:20
6 manufacturers for testing, and firearms that I 15:11:24
7 acquire in other ways. 15:11:26
8 My work in about 400 cases as an 15:11:31
9 expert witness, all of those kinds of things, 15:11:36
10 basically a lifetime of professional experience. 15:11:40
11 Q. Sure. 15:11:41
12 Did you consult any written 15:11:43
13 documents, when you were preparing Plaintiff's 15:11:44
14 Exhibit 1? 15:11:46
15 A. Certainly. I consulted the California 15:11:48
16 Assault Weapons Statute that I was being asked to 15:11:52
17 comment on. And I consulted the -- I forget if the 15:12:00
18 declaration of -- let's see, his name is Blake 15:12:07
19 Graham. I think that was in existence already. And 15:12:10
20 I -- I believe I looked at that. I believe I looked 15:12:14
21 at the regulations under the statute. I forget if I 15:12:22
22 looked at anything else in particular. 15:12:26
23 Q. Okay. So when you -- so when you say 15:12:27
24 that you looked at the declaration of Blake Graham, 15:12:31
25 would that have been the declaration that Mr. Graham 15:12:34

1 submitted in this case or in Rupp versus Becerra, 15:12:37
2 which is a -- a different case challenging 15:12:40
3 California's Assault Weapons Control Act? 15:12:45
4 A. No, I believe the one I looked at is the 15:12:47
5 one I have here in front of me, which is Miller 15:12:49
6 versus Becerra. 15:12:52
7 Q. Can you look at the signature page for 15:12:56
8 that -- or actually, is there a -- a stamp on the top 15:12:59
9 of that document that is in blue, it says, Case 3:19? 15:13:04
10 A. Not on my copy, no. 15:13:14
11 Q. Can you turn to the signature page of the 15:13:15
12 declaration that you're looking at? 15:13:18
13 A. Yes, sir. 15:13:18
14 Q. What's the date? 15:13:19
15 A. It says January 22nd, 2020, so I guess I 15:13:23
16 didn't look at that in prepping my declaration. I 15:13:25
17 looked at it, I believe, before the San Diego 15:13:28
18 hearing. So I was confused on that, I believe. 15:13:32
19 Q. That's okay. But you didn't refer to a 15:13:34
20 different declaration of Blake Graham, in -- in 15:13:37
21 preparing Plaintiff's Exhibit 1, is that correct? 15:13:40
22 A. No, I've only seen one. 15:13:43
23 Q. Okay. Thanks. That's what I wanted to 15:13:44
24 make sure. 15:13:46
25 Has anyone other than Plaintiff's 15:13:48

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1 counsel assisted you in your engagement in this case? 15:13:57

2 A. There was a -- a woman, and I don't know 15:14:01

3 whether she works for Plaintiff's counsel or whether 15:14:04

4 she works for the Plaintiffs, who did some 15:14:10

5 coordinating about travel arrangements and when we 15:14:13

6 were -- when I was going to meet with counsel and so 15:14:15

7 forth. 15:14:17

8 But that's the only other person I 15:14:19

9 can think of. 15:14:22

10 Q. So in -- in terms of substantive 15:14:23

11 assistance, you haven't received any substantive 15:14:27

12 assistance from anyone other than Plaintiff's 15:14:30

13 counsel? 15:14:30

14 A. No. 15:14:30

15 Q. Would that be correct? 15:14:32

16 A. That's correct. 15:14:32

17 Q. Thank you. 15:14:33

18 So looking at Paragraph 1 of 15:14:35

19 Plaintiff's Exhibit 1, which is your declaration, do 15:14:44

20 you see at Line 5 that quote, I've been retained by 15:14:47

21 Plaintiffs in this matter to provide expert opinion 15:14:51

22 testimony regarding the design, usage, utility, 15:14:55

23 safety features, and lethality of modern 15:14:59

24 semiautomatic rifles, primarily the AR-15 type 15:15:04

25 rifle -- rifle in its common configurations discussed 15:15:09

1	below.	15:15:10
2	Do you see that?	15:15:11
3	A. Yes, I do.	15:15:12
4	Q. Would that statement accurately	15:15:14
5	characterize the scope of your expert opinion in this	15:15:18
6	case?	15:15:18
7	A. No. Because, as you can see, in my	15:15:21
8	declaration, I also make comments about shotguns and	15:15:25
9	about what California would call assault pistols, I	15:15:32
10	guess, or something like that. I mean, there are	15:15:34
11	other things. My declaration -- the scope of it	15:15:39
12	clearly goes beyond just AR-15 rifles.	15:15:42
13	Q. And the scope goes beyond modern sporting	15:15:49
14	rifles, as well, is that your testimony?	15:15:56
15	A. Yes, because that term is usually used to	15:15:57
16	mean AR-15 type rifles, possibly AK-47 semiauto	15:16:06
17	rifles.	15:16:09
18	Q. Okay. So -- so were you retained by	15:16:10
19	Plaintiffs to provide expert opinion testimony	15:16:14
20	regarding pistols and shotguns, in addition to	15:16:17
21	rifles?	15:16:20
22	A. Give me just a second, if you would.	15:16:26
23	Q. Absolutely. Take your time.	15:16:40
24	A. See, if you -- if you look at my	15:16:42
25	declaration, and we get to, just as examples,	15:16:45

1 Paragraphs 36 and 37, it's talking about features on 15:16:51
2 handguns that are prohibited by the Pennsylvania -- 15:16:59
3 by the California statute. And pistol grips on 15:17:03
4 handguns and barrel shrouds on handguns. 15:17:07
5 Also, I think there is some 15:17:12
6 reference previously to compensators and suppressors. 15:17:19
7 So it -- my declaration clearly, as you understand, 15:17:23
8 goes beyond rifles. 15:17:27
9 Q. Okay. 15:17:29
10 A. And I've commented -- I -- I've commented 15:17:31
11 at the hearing in San Diego on telescoping buttstocks 15:17:38
12 and their utility on semiautomatic shotguns, and that 15:17:45
13 goes beyond AR-15 rifles or modern sporting rifles. 15:17:50
14 So yes, my work has gone beyond 15:17:53
15 this one sentence. 15:18:01
16 Q. Thank you. 15:18:01
17 You're an attorney, is that 15:18:08
18 correct? 15:18:08
19 A. I am. 15:18:09
20 Q. Are you currently practicing law? 15:18:11
21 A. Yes. 15:18:13
22 Q. What is the nature of your practice? 15:18:22
23 A. My practice, at this point, is 10% or 15:18:25
24 less than 10% of my working time. It involves 15:18:31
25 primarily civil, commercial things, reviewing of 15:18:39

1 contracts, risk management issues, consulting, 15:18:45
2 providing legal advice on various things that my firm 15:18:49
3 asks me to do. 15:18:52
4 Typically, my practice has rarely, 15:18:56
5 rarely anything to do with firearms. But once in a 15:18:59
6 while it does. 15:19:04
7 Q. So you haven't served as counsel of 15:19:06
8 record in any Second Amendment cases? 15:19:08
9 A. No. 15:19:08
10 Q. And when I say Second Amendment cases, 15:19:14
11 you generally understand what I'm referring to? 15:19:17
12 A. I believe I do. 15:19:22
13 Q. What is the Peregrine Corporation? 15:19:25
14 A. Peregrine is my consulting firm. It's 15:19:29
15 been incorporated since 1985, operating continuously 15:19:33
16 since then. And through Peregrine, I do police 15:19:40
17 training and consulting, training and consulting of 15:19:43
18 security personnel, some training of private 15:19:46
19 individuals who are not police, not military, not 15:19:50
20 security. 15:19:50
21 I do consulting to manufacturers of 15:19:54
22 all kinds of firearms related product, firearms, 15:20:01
23 holsters, shooting ranges, shooting range equipment, 15:20:04
24 target equipment, ammunition. 15:20:07
25 I do consulting for law enforcement 15:20:11

1 agencies and governmental entities, in terms of use 15:20:17
2 of force policies and their firearms policies and 15:20:20
3 their training programs that they use for their law 15:20:23
4 enforcement personnel. I do expert witnessing, like 15:20:25
5 I'm doing today. 15:20:29
6 I review cases for prosecutors at 15:20:34
7 various levels, to advise whether they should bring 15:20:37
8 criminal charges against people who have used force, 15:20:41
9 whether those are police officers or others. A wide 15:20:45
10 variety of things. Those are all done through 15:20:48
11 Peregrine Corporation. 15:20:50
12 Q. Okay. So -- so your -- your work in this 15:20:52
13 case, in particular, is being done through Peregrine, 15:20:55
14 is that right? 15:20:57
15 A. That is correct. 15:20:59
16 Q. How many employees does Peregrine employ? 15:21:01
17 A. It has one full-time employee, which is 15:21:03
18 myself. And it has two part-time employees, who are 15:21:07
19 assistants or secretarial, whatever. 15:21:13
20 Q. Do the assistants provide any substantive 15:21:15
21 help in your consulting services in -- through 15:21:18
22 Peregrine? 15:21:19
23 A. Well, at times, I ask them to research 15:21:21
24 something or to -- to look for a particular thing for 15:21:24
25 me. I guess you might call that substantive help. 15:21:28

1 But they are -- they are not firearms experts or use 15:21:31
2 of force experts. They assist me in my work. 15:21:34
3 Q. Did any of the other individuals at 15:21:37
4 Peregrine assist you in this case? 15:21:41
5 A. Not that I can think of, no. 15:21:43
6 Yes. No, I -- I take that back. 15:21:46
7 One of -- one of the two part-time employees is my 15:21:49
8 wife. And she did help me view the Kraut video that 15:21:58
9 was sent to me, and I could not get it to play on my 15:22:01
10 computer. And she succeeded in getting it to 15:22:04
11 download and play for me. 15:22:07
12 Q. Excellent. That's good. 15:22:08
13 Do you work -- do you work for any 15:22:10
14 other companies, other than Peregrine and your 15:22:13
15 practice? 15:22:17
16 A. Not on a paid basis. 15:22:20
17 Q. Have you served on any boards of 15:22:29
18 directors of companies? 15:22:30
19 A. I serve on a board of directors of an 15:22:32
20 association, which is the International Association 15:22:34
21 of Law Enforcement Firearms Instructors. I have been 15:22:37
22 on their board of directors for about 35 years now. 15:22:41
23 Q. Do you have any financial investments in 15:22:44
24 firearm manufacturers? 15:22:45
25 A. No. 15:22:47

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1	Q.	Any financial investments in firearm	15:22:50
2		retailers?	15:22:50
3	A.	No.	15:22:50
4	Q.	Sir, referring to Plaintiff's Exhibit 1	15:23:02
5		Paragraph 10, which is on Page 4, you provide an	15:23:10
6		overview of your experience with firearms.	15:23:14
7		Is that a fair characterization?	15:23:15
8		It's a very long paragraph.	15:23:17
9	A.	No.	15:23:17
10	Q.	Feel free to take a look.	15:23:20
11	A.	It's not a fair characterization.	15:23:22
12		Paragraph 10 concerns, as it says, concerning my	15:23:25
13		experience, knowledge and expertise with	15:23:27
14		semiautomatic rifles in general and AR-15 type rifles	15:23:32
15		in particular.	15:23:32
16		So it -- it -- it gives a summary	15:23:36
17		of -- of experience with those particular kinds of	15:23:39
18		firearms.	15:23:40
19	Q.	Thank you.	15:23:41
20		So it's more specific than the	15:23:42
21		question I asked?	15:23:43
22	A.	Yes, sir.	15:23:44
23	Q.	Thank you.	15:23:45
24		What is a Mini-14?	15:23:48
25	A.	A Mini-14 is a -- a rifle manufactured by	15:23:52

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1 Sturm, Ruger & Company. It's a semiautomatic rifle. 15:23:58
2 The Mini-14 is in caliber .223 or .556 millimeter. 15:24:05
3 The same -- the same as an AR-15 in caliber. 15:24:08
4 Q. So that would be a centerfire rifle? 15:24:12
5 A. Yes. 15:24:12
6 Q. To your knowledge, does the Mini-14 have 15:24:14
7 any of the features that were listed in California 15:24:19
8 Penal Code Section 30515(a)? 15:24:24
9 I will put up Kapelsohn Exhibit 2, 15:24:27
10 so can you reference the statute again? 15:24:31
11 A. Some -- some Mini-14s do. And some 15:24:34
12 don't. The Mini-14 has been manufactured by Ruger 15:24:39
13 for decades in many, many variations. Some of them 15:24:46
14 have folding stocks. Some of them have flash 15:24:51
15 suppressors. Some of them have pistol grips. Others 15:24:55
16 have conventional wooden stocks, like most sporting 15:24:59
17 or hunting rifles do. 15:25:00
18 So it's a broad question, and the 15:25:02
19 answer is, some Mini-14s have these features, others 15:25:06
20 don't. 15:25:06
21 Q. Thank you. 15:25:07
22 How many firearms would you 15:25:10
23 estimate that you own? 15:25:13
24 A. That's a tough one because the number 15:25:15
25 changes sometimes weekly. I certainly own -- and 15:25:26

1 just by way of explanation, I buy firearms for cases 15:25:31
2 I'm working in, where I need those firearms to do 15:25:35
3 certain testing. Counsel sends me firearms. 15:25:37
4 Manufacturers send me firearms. So that's why it 15:25:40
5 varies so often. I certainly own over 50 firearms, 15:25:44
6 whether I own more than 100 or not, I'm not sure. 15:25:48
7 Q. Okay. And my -- my question is directed 15:25:50
8 to you in your personal capacity, not firearms that 15:25:53
9 you may acquire in connection with any -- any 15:25:57
10 employment or any engagement that you have. 15:25:59
11 So personally, you would estimate 15:26:00
12 that you have over 50? Is that -- I don't want to 15:26:04
13 misstate your testimony. 15:26:07
14 A. I didn't understand your question to mean 15:26:09
15 personally. I -- I have -- Peregrine has a Federal 15:26:15
16 firearms license. I or Peregrine have had that 15:26:20
17 license since the mid -- early or mid 1980s. Many 15:26:27
18 firearms are -- are acquired on that license, either 15:26:30
19 transferred to me without charge or purchased. 15:26:36
20 And which of those I have written 15:26:39
21 off the books to me personally, or in which cases I 15:26:43
22 have purchased a firearm personally at a gun store or 15:26:48
23 not, that would take a lot of researching, to figure 15:26:51
24 out which of those firearms are on Peregrine's 15:26:55
25 Federal firearms license acquisition and disposition 15:26:58

1 books, and which are owned by me personally. 15:27:00

2 Q. Okay. 15:27:01

3 A. Certainly -- certainly Peregrine owns far 15:27:04

4 more firearms or possesses far more firearms than I 15:27:09

5 own personally. I own a relatively small number, 15:27:11

6 compared to Peregrine. 15:27:14

7 Q. And can you provide an estimate of what 15:27:15

8 that relatively small number is? 15:27:18

9 A. I really can't, for fear of misstating it 15:27:20

10 one way or the other. 15:27:22

11 Q. Is it more than ten? 15:27:24

12 A. That I own personally? 15:27:27

13 Probably. 15:27:29

14 Q. More than 20? 15:27:31

15 A. I -- I don't know. 15:27:32

16 Q. Okay. That's fine. 15:27:35

17 Do you personally own any firearms 15:27:38

18 that would qualify as an assault weapon under 15:27:41

19 California Penal Code Section 30515, Kapelsohn 15:27:48

20 Exhibit 2? 15:27:50

21 A. Absolutely. 15:27:50

22 Q. And you own firearms that would not 15:27:53

23 qualify as an assault weapon under the statute, 15:27:56

24 correct? 15:27:57

25 A. Correct. 15:27:57

1 Q. Can you provide an estimate of what 15:28:00
2 percentage of your personal collection would be 15:28:03
3 firearms that would qualify as assault weapons under 15:28:06
4 California Penal Code Section 30515? 15:28:11
5 A. So now, when you say personal collection, 15:28:12
6 you're talking about guns that I own personally 15:28:14
7 rather than guns that are owned by or possessed by 15:28:20
8 Peregrine Corporation? 15:28:23
9 Q. That's correct. 15:28:23
10 A. No, I could not -- not at all. I would 15:28:25
11 have to sit down, and it would probably take me many 15:28:28
12 hours to come up with a -- the numbers and 15:28:31
13 percentages that you're asking for now. 15:28:33
14 Q. And you personally own handguns? 15:28:37
15 A. Yes. 15:28:39
16 Q. And you personally own AR-15s? 15:28:49
17 A. Yes, I'm pretty -- I'm -- I'm pretty sure 15:28:50
18 I personally own some AR-15s. 15:28:53
19 Q. Do you own more handguns than you do 15:28:55
20 AR-15s? 15:28:57
21 A. Oh, yes, I'm sure. 15:28:59
22 Q. Do you own more handguns than you own 15:29:02
23 rifles? 15:29:03
24 A. I -- I don't -- I don't know. Possibly. 15:29:08
25 Q. Do you own any large capacity magazines? 15:29:21

1 A. Many. 15:29:23

2 Q. When I say large capacity magazines, you 15:29:26

3 understand that I'm using that phrase as it is used 15:29:29

4 under -- or in California statutes, which would be 15:29:35

5 an -- an ammunition magazine capable of holding more 15:29:37

6 than ten rounds of ammunition? 15:29:39

7 A. That's what I understood you meant. Most 15:29:42

8 of the world does not consider that a large capacity 15:29:45

9 magazine. It's a small capacity magazine for an 15:29:49

10 AR-15. But I -- I took you to mean more than ten 15:29:51

11 rounds and yes, I -- I own many such. 15:29:55

12 Q. Can you provide an estimate of how many 15:29:58

13 large capacity magazines you personally own? 15:30:02

14 A. It would have to be a very rough, rough 15:30:05

15 estimate. It -- it includes most -- most all of the 15:30:10

16 AR-15 and Mini-14 and M1 Carbine and other 15:30:20

17 semiautomatic rifle, M1A and other semiautomatic 15:30:28

18 rifle magazines that I own, because most all of them 15:30:32

19 are over ten rounds. 15:30:34

20 And it also includes oh, half or 15:30:37

21 more than half of the semiautomatic pistol magazines 15:30:41

22 that I own. So it's lots of magazines. How many, 15:30:45

23 I'm not sure. Probably well over 100. 15:30:50

24 Q. Okay. Do you own any pistols that would 15:30:53

25 qualify as an assault weapon under California Penal 15:30:57

1 Code Section 30515, which has been marked as 15:31:02
2 Kapelsohn Exhibit 2? 15:31:03
3 A. So does -- if I -- if I understand it 15:31:04
4 correctly, would that be pistols with magazines of 15:31:08
5 over ten rounds? 15:31:10
6 Q. So referring to Kapelsohn Exhibit 2, 15:31:14
7 California Penal Code Section 30515(a)(4) defines. 15:31:21
8 as an assault weapon, a semiautomatic pistol that 15:31:24
9 does not have a fixed magazine, but has any one of 15:31:28
10 the following. 15:31:29
11 Do you see that sentence, sir? 15:31:31
12 A. Give me -- give me the number of it 15:31:34
13 again. 15:31:35
14 Q. So this is Subdivision (a)(4). It's the 15:31:39
15 line that is second from the bottom. 15:31:45
16 Are you looking at the screen I'm 15:31:47
17 sharing? 15:31:47
18 A. Oh, no, I should look at the screen 15:31:49
19 rather than my copy. 15:31:52
20 Q. Actually, I -- I can -- I'm using my 15:31:52
21 mouse. I think you can see my mouse as well, right? 15:31:54
22 A. I can, Yes. 15:31:55
23 Q. Okay. So I'm going to -- I'm going to 15:31:56
24 cheat a little bit. 15:31:56
25 There you go. Can you see it? 15:31:58

1 A. Yes. A semiautomatic pistol that does 15:32:01
2 not have a fixed magazine but has any one of the 15:32:06
3 following. And then we get to a threaded barrel. 15:32:08
4 And what else do we have? 15:32:14
5 Q. So -- so the statute defines a 15:32:16
6 semiautomatic pistol without a fixed magazine as an 15:32:19
7 assault weapon, if it has any of the following, a 15:32:23
8 threaded barrel -- 15:32:23
9 A. Right. 15:32:23
10 Q. -- capable of accepting a flash 15:32:25
11 suppressor, forward handgrip, or silencer? 15:32:28
12 A. Right. 15:32:30
13 Q. And then a second handgrip? 15:32:34
14 A. Right. 15:32:34
15 Q. Or a shroud that is attached -- so this 15:32:37
16 would be a barrel shroud, right? 15:32:41
17 A. Right, correct. 15:32:42
18 Q. Or the -- or the capacity to accept a 15:32:44
19 detachable magazine at some location outside of the 15:32:48
20 pistol grip. 15:32:49
21 Do you have any pistols that would 15:32:52
22 qualify as an assault weapon, under any of those 15:32:58
23 definitions? 15:32:59
24 A. I think so. But, wait, isn't -- if we 15:33:09
25 get to five, a semiautomatic pistol with a -- oh, 15:33:12

1 with a fixed magazine over ten rounds. Okay. 15:33:15

2 Q. Yes, so my question is about Subdivision 15:33:17

3 (a)(4), first. 15:33:18

4 A. Okay. I -- I think I may have one or 15:33:25

5 more pistols that meet these prohibitions that -- 15:33:31

6 that -- that meet these defined prohibitions. 15:33:37

7 Q. And what models would those pistols be, 15:33:39

8 if you can recall? 15:33:41

9 A. I'm not positive, but I think I may have 15:33:47

10 one or more pistols that have threaded barrels. And 15:33:51

11 I am not positive, but I may still own a Broomhandle 15:34:01

12 Mauser, where the detachable magazine does not go 15:34:07

13 into the grip of the line. It goes -- it -- it's 15:34:10

14 separate from the grip of the gun. 15:34:11

15 So those would be, I believe, 15:34:13

16 prohibited assault weapons. 15:34:18

17 Q. Okay. And how about shotguns, do you own 15:34:21

18 any -- personally own any shotguns that qualify as an 15:34:25

19 assault weapon under Penal Code Section 30515. 15:34:31

20 So looking at Kapelsohn Exhibit 2, 15:34:33

21 Section 30515(a)(6), do you see that, sir? 15:34:42

22 A. I see the six. 15:34:43

23 Q. And Subdivision 6 defines a semiautomatic 15:34:46

24 shotgun as an assault weapon, if it has both of the 15:34:52

25 following, a folding or telescoping stock and a 15:34:55

1 pistol grip beneath the action. 15:35:00

2 Do you see that? 15:35:01

3 A. I see that. 15:35:01

4 Q. Do you own any shotguns that would 15:35:03

5 qualify as an assault weapon under that definition? 15:35:07

6 A. I'm not sure. 15:35:08

7 Q. Do you own any semiautomatic shotguns 15:35:13

8 that -- that are cable of accepting a detachable 15:35:17

9 magazine? 15:35:18

10 A. Not current -- I have, but I don't think 15:35:20

11 I currently do. 15:35:22

12 Q. Okay. And do you own personally any 15:35:24

13 shotguns with a revolving cylinder, which is 15:35:28

14 referenced in Section 30515(a)(8) -- 15:35:33

15 A. No, I don't. 15:35:33

16 Q. -- Page 2 of Kapelsohn Exhibit 2? 15:35:34

17 A. No, I do not. 15:35:37

18 Q. Thank you. 15:35:38

19 What is a submachine gun? 15:35:41

20 A. A -- a submachine gun is an automatic 15:35:46

21 or -- or a select-fire shoulder weapon that fires a 15:35:51

22 pistol caliber cartridge. 15:35:54

23 Q. Is a submachine gun a rifle? 15:36:02

24 A. Typically, it's not considered a rifle 15:36:08

25 because a -- a submachine gun is firing a pistol 15:36:12

1 caliber cartridge and a rifle fires a rifle 15:36:15
2 cartridge. But, you know, it depends, to some 15:36:18
3 extent, on what definition you look at, who is doing 15:36:23
4 the defining. 15:36:25
5 Q. Are you familiar with the Uzi? 15:36:28
6 A. I am. 15:36:31
7 Q. Is an Uzi a submachine gun? 15:36:34
8 A. Some Uzis are submachine guns. Some are 15:36:37
9 not. In other words, the original Uzi is a 15:36:40
10 select-fire weapon, shoulder weapon that fires a 15:36:42
11 pistol caliber cartridge, which was 9 millimeter and 15:36:46
12 so that is a submachine gun. 15:36:50
13 But Israeli military industries and 15:36:52
14 Israeli weapons industries have both made 15:36:57
15 semiautomatic versions of the Uzi, those are not 15:37:00
16 submachine guns. 15:37:01
17 Q. So in your view, a semiautomatic weapon 15:37:05
18 cannot be a -- a submachine gun? 15:37:09
19 A. It's not those two -- 15:37:09
20 Q. Let me -- let me -- 15:37:09
21 A. Those two things -- 15:37:09
22 Q. Let me rephrase. 15:37:09
23 A. Those two definitions are mutually 15:37:13
24 exclusive. 15:37:15
25 Q. Sorry. 15:37:16

1 So in your view, a firearm that can 15:37:19
2 only fire in semiautomatic mode cannot be considered 15:37:23
3 a submachine gun, is that right? 15:37:26
4 A. It's not just my view. It's the -- the 15:37:27
5 world of -- the view of the knowledgeable firearms 15:37:31
6 world. A -- a -- 15:37:34
7 Q. Okay. But I'm asking -- 15:37:34
8 A. A submachine gun indicates that it must 15:37:35
9 be capable of automatic fire. 15:37:39
10 Q. That was my question. 15:37:39
11 A. So if it's not capable of it, it's not a 15:37:42
12 submachine gun. 15:37:43
13 Q. Thank you. 15:37:51
14 Are you a member of the National 15:37:53
15 Rifle Association? 15:37:54
16 A. Yes. 15:37:58
17 Q. Are you an endowed member of the National 15:38:00
18 Rifle Association? 15:38:04
19 A. I'm some kind of -- I think it's -- it's 15:38:08
20 either called patron or endowment or something 15:38:11
21 member, meaning I've paid that much money for my 15:38:14
22 membership once. It's a one-time payment. 15:38:19
23 Q. Okay. Do you know how much that payment 15:38:24
24 is? 15:38:24
25 A. I think at the time it might have been 15:38:26

1	\$200. I'm not sure what it is now.	15:38:40
2	Q. Do you have any other involvement in the	15:38:41
3	National Rifle Association?	15:38:49
4	A. Well, I am certified by them as a police	15:38:52
5	firearms instructor, police patrol rifle instructor,	15:38:56
6	police precision rifle instructor, tactical weapons	15:39:01
7	instructor, and as a handgun, rifle and shotgun	15:39:04
8	instructor for civilians, and as a chief range safety	15:39:09
9	officer. And I think I'm certified in a few other	15:39:12
10	disciplines. Home firearms safety, and a few other	15:39:17
11	things. They're -- most of them are listed in my	15:39:20
12	declaration, I believe.	15:39:24
13	Q. Yes. And -- and when you say that you	15:39:25
14	are certified by the National Rifle Association as an	15:39:28
15	instructor, is that a process whereby you had to take	15:39:32
16	classes? That -- can you just describe the process	15:39:36
17	by which you had to be certified, very -- very	15:39:38
18	briefly, just so I can understand what you mean by	15:39:41
19	certified?	15:39:41
20	A. Most of those police certifications that	15:39:43
21	I listed require a week-long 40 or 44-hour long	15:39:51
22	course that involves both firing qualification for	15:39:57
23	score and written testing, and in some cases, student	15:40:02
24	teaching in front of the class and preparation of	15:40:04
25	lesson plans and so forth.	15:40:08

1 And to maintain certification for 15:40:09
2 those certifications, you've got to every, I believe 15:40:15
3 it is, three years, if I'm correct, show that you 15:40:17
4 have had continuing instructor-level certification, 15:40:22
5 at least 24 hours worth, of a type that is acceptable 15:40:27
6 to the NRA. So it requires hands-on training and 15:40:33
7 passing of standards and continuous recertification. 15:40:40
8 Q. So as a -- a certified instructor for the 15:40:43
9 National Rifle Association, you don't provide any 15:40:46
10 services for the National Rifle Association, is that 15:40:51
11 right? 15:40:51
12 A. That's correct. And I would also say 15:40:53
13 that the way you asked the question is incorrect. 15:40:55
14 I'm not a certified instructor for 15:40:57
15 the National Rifle Association. I'm certified by 15:41:00
16 them. 15:41:04
17 Q. Thank you. 15:41:05
18 So you don't receive any financial 15:41:07
19 compensation from the National Rifle Association? 15:41:10
20 A. No, sir. 15:41:11
21 Q. Thank you. 15:41:11
22 Are you member of the Firearms 15:41:13
23 Policy Coalition? 15:41:16
24 A. No. 15:41:16
25 Q. Do you know what the Firearms Policy 15:41:17

1	Coalition is?	15:41:20
2	A. No.	15:41:20
3	Q. Are you a member of any other Second	15:41:25
4	Amendment organizations? And when I say Second	15:41:28
5	Amendment organizations, let me rephrase.	15:41:31
6	Are you a member of any	15:41:34
7	organizations that support the Second Amendment?	15:41:38
8	A. I'm a member of all kinds of	15:41:40
9	organizations that support the Second Amendment.	15:41:42
10	It's part of the United States Constitution. So I	15:41:46
11	think you're going to have to list organizations for	15:41:48
12	me, if you want me to tell you whether I'm a member	15:41:50
13	of them. Because the -- the way you asked the	15:41:52
14	question includes a wide variety of organizations.	15:41:56
15	Q. Sure. I -- I don't want to sit here all	15:41:59
16	day having you list those off.	15:42:02
17	A. It won't take me all day to list them	15:42:05
18	off, sir. But, for instance, I'm a reserved sworn	15:42:06
19	deputy sheriff for 23 years of a sheriffs department.	15:42:10
20	Part of my oath there involves supporting and	15:42:12
21	defending the Constitution. That includes the Second	15:42:16
22	Amendment.	15:42:18
23	Q. Pardon me, Mr. Kapelsohn, I'm asking a	15:42:31
24	question, please.	15:42:31
25	A. I was giving --	15:42:31

1 Q. I -- I was -- I was going to ask a 15:42:32
2 question and Mr. Kapelsohn started talking over me. 15:42:37
3 So do you consider the National 15:42:39
4 Rifle Association to be an organization focused on 15:42:42
5 Second Amendment rights? 15:42:49
6 A. I can't answer your question the way 15:42:51
7 you've asked it. Certainly, Second Amendment rights 15:42:54
8 is one of the things that is important to the 15:42:57
9 National Rifle Association. It's also the largest 15:43:01
10 police training organization in the United States and 15:43:04
11 has been for decades. 15:43:06
12 So my certifications through the 15:43:08
13 NRA are because those are the certifications that I 15:43:13
14 and thousands of other police firearms instructors 15:43:16
15 have. It has nothing to do with the Second 15:43:20
16 Amendment. 15:43:22
17 Q. Would you consider that a primary 15:43:24
18 component of the National Rifle Association, is to 15:43:26
19 support expanded Second Amendment rights? 15:43:30
20 A. I don't know what expanded Second 15:43:33
21 Amendment rights means. It's certainly -- 15:43:35
22 Q. My question -- 15:43:36
23 A. I'm still answering your question. 15:43:37
24 Please, don't cut me off. 15:43:39
25 Certainly, the National Rifle 15:43:39

1 Association is in favor and supports Second Amendment 15:43:44
2 rights. I don't know what you mean by expanded 15:43:46
3 Second Amendment rights. 15:43:48
4 Q. Thank you. 15:43:48
5 I did -- I did -- I was going to 15:43:49
6 rephrase my question by excising those words. 15:43:53
7 MR. ECHEVERRIA: Pardon me, can you 15:44:02
8 read back Mr. Kapelsohn's answer to that question? 15:44:22
9 (The reporter read the referred-to 15:44:22
10 portion of the record.) 15:44:22
11 MR. ECHEVERRIA: Thank you. 15:44:22
12 BY MR. ECHEVERRIA: 15:44:22
13 Q. So in your view, the -- so in your view, 15:44:40
14 the National Rifle Association supports Second 15:44:43
15 Amendment rights, correct, Mr. Kapelsohn? 15:44:45
16 A. Certainly. 15:44:51
17 Q. And the support for -- the support for 15:44:54
18 Second Amendment rights by the National Rifle 15:44:56
19 Association is referenced in the National Rifle 15:44:59
20 Association's charter, to your knowledge? 15:45:02
21 A. I don't know what is in their charter. 15:45:04
22 MR. LEE: Lacks foundation. Calls 15:45:08
23 for speculation. 15:45:13
24 BY MR. ECHEVERRIA: 15:45:13
25 Q. Are you a member of any other 15:45:14

1 organizations that are specifically supportive of 15:45:16
2 Second Amendment rights? 15:45:23
3 A. I don't know what you mean. I've said 15:45:24
4 that already, by specifically supportive of Second 15:45:28
5 Amendment rights. 15:45:30
6 I -- I'm a member of a number of 15:45:32
7 organizations. Most of them, I believe, if asked, 15:45:36
8 would say they believe in the United States 15:45:38
9 Constitution. Some of them require you to take an 15:45:40
10 oath, saying you will support the U.S. Constitution. 15:45:42
11 That includes the Second Amendment. 15:45:45
12 So I'm not sure what you mean. 15:45:47
13 Q. I -- I understand that, sir. 15:45:48
14 So take the American Civil 15:45:51
15 Liberties Union, for example, the ACLU, are you 15:45:54
16 familiar with that organization? 15:45:55
17 A. I am, in general. 15:45:58
18 Q. Right. And the American Civil Liberties 15:45:59
19 Union is generally supportive of Constitutional 15:46:04
20 rights. Is -- would you agree with that? 15:46:07
21 MR. LEE: That assumes facts, but 15:46:10
22 okay, you can answer. 15:46:12
23 A. In -- 15:46:12
24 Q. I'm -- I'm asking if you would agree with 15:46:14
25 that. If he -- if he -- if he can't answer that 15:46:15

1 question, he can tell me. 15:46:16

2 A. In a general way, that's my 15:46:19

3 understanding. 15:46:19

4 Q. Would you say that the ACLU is 15:46:21

5 specifically supportive of Second Amendment rights? 15:46:24

6 A. I don't know. 15:46:32

7 Q. Okay. Do you support or oppose assault 15:46:35

8 weapons bans? 15:46:38

9 A. It depends on what the ban is and what an 15:46:41

10 assault weapon is defined as. 15:46:44

11 Q. Did you support or oppose the Federal 15:46:46

12 Assault Weapons Ban that was in effect from 1994 to 15:46:49

13 2004? 15:46:52

14 A. I thought it was foolish legislation, and 15:46:56

15 I thought it violated Constitutional rights. 15:47:00

16 Q. So you opposed the Federal Assault 15:47:02

17 Weapons Ban, is that correct? 15:47:04

18 A. Well, when you say oppose, I -- I get the 15:47:07

19 idea of taking some specific action. But I guess in 15:47:12

20 a general way, I would say I was opposed to it rather 15:47:16

21 than in favor of it. 15:47:24

22 Q. Are there any laws -- or pardon me. 15:47:26

23 Are there any policies that you 15:47:27

24 would support to address gun violence? 15:47:30

25 A. Of course. 15:47:35

1	Q.	Can you provide some examples of those	15:47:37
2		policies?	15:47:37
3	A.	Of course.	15:47:42
4	Q.	Can you please provide some examples?	15:47:45
5	A.	I will.	15:47:46
6	Q.	Thank you.	15:47:47
7	A.	I'm trying to think of where to start. I	15:47:52
8		certainly believe that convicted felons and maybe	15:47:58
9		certain kinds of convicted misdemeanants should not	15:48:02
10		be permitted to purchase or possess firearms.	15:48:08
11		I believe that people who commit	15:48:11
12		crimes of gun violence, who are convicted of those	15:48:16
13		crimes, should typically be sentenced to jail and	15:48:21
14		that those should be strict sentences.	15:48:24
15		I believe, in general, of many of	15:48:26
16		the enhancement type penalties that I've heard of. I	15:48:31
17		can't say all of them because we have a big country	15:48:33
18		with 50 states, each having their own criminal laws.	15:48:37
19		But, in general, in favor of enhancements for crimes	15:48:41
20		committed with firearms.	15:48:44
21		I believe that there should be more	15:48:48
22		Federal prosecution than there is in some Federal	15:48:52
23		districts, not necessarily all, of people who violate	15:48:56
24		the gun laws, make straw purchases or sell guns	15:49:01
25		illegally or commit crimes involving guns.	15:49:05

1 I believe there are some kinds of 15:49:07
2 guns that should probably be prohibited from general 15:49:12
3 ownership, but when we get down to just what those 15:49:18
4 are, I think it takes a lot of defining and a lot of 15:49:21
5 technical knowledge. 15:49:24

6 Those are some examples of things 15:49:26
7 that I think should be done. I think that I'm in 15:49:29
8 favor of law enforcement. I am not in favor of 15:49:33
9 defunding police. I've been a sworn, reserved deputy 15:49:36
10 sheriff in two different sheriff departments in the 15:49:39
11 two states I've lived in. 15:49:40

12 I am a pro-law-and-order person. I 15:49:43
13 guess that is contrary or opposed to gun violence, so 15:49:45
14 those are some examples. 15:49:50

15 Q. Okay. So you would consider gun violence 15:50:01
16 against law enforcement to be an important public 15:50:04
17 policy issue for government to address? 15:50:08

18 A. Certainly. 15:50:10

19 Q. How about mass shootings, are mass 15:50:12
20 shootings an important public policy issue for 15:50:16
21 government to address? 15:50:18

22 A. Yes. 15:50:20

23 Q. So looking back at Plaintiff's Exhibit 1, 15:50:22
24 which is your declaration, let me pull it up for you. 15:50:39

25 Can you see Plaintiff's Exhibit 1? 15:50:40

1 A. I can. 15:50:42

2 Q. I am going to turn to Page 9 of 15:50:44

3 Plaintiff's Exhibit 1, and refer you -- actually, we 15:50:48

4 are going to look at Page 7 of Plaintiff's Exhibit 1, 15:50:55

5 Paragraph 14. 15:50:56

6 Do you see that paragraph, sir? 15:50:59

7 A. I do. 15:51:04

8 Q. And at the bottom of that paragraph you 15:51:06

9 state, unlike many of the individuals who, on 15:51:08

10 information and belief, have drafted, proposed, 15:51:12

11 and/or support the legislation in question, I have 15:51:17

12 actual, not theoretic or secondhand, experience with 15:51:19

13 all of the types of firearms and firearms design 15:51:22

14 features addressed by the legislation. 15:51:25

15 Do you see that sentence? 15:51:28

16 A. I do. 15:51:28

17 Q. And when you refer to the legislation in 15:51:29

18 question, you were referring to California's Assault 15:51:32

19 Weapons Control Act? 15:51:35

20 A. The Act that we're -- that we're here 15:51:37

21 about today, yes. 15:51:39

22 Q. Thank you. 15:51:49

23 How do you know the identities of 15:51:54

24 the individuals who have drafted the Assault Weapons 15:51:57

25 Control Act? 15:51:59

1 A. I don't. 15:52:00

2 Q. But do you write that you have -- pardon 15:52:02

3 me. 15:52:03

4 But you do write that the 15:52:05

5 individuals who drafted the Assault Weapons Control 15:52:07

6 Act lack actual experience with the types of firearms 15:52:13

7 regulated under the statute, right? 15:52:15

8 A. I said on information -- I said on 15:52:18

9 information or belief, and I base it, in part, on 15:52:25

10 reading the Act. And my opinion that someone who 15:52:30

11 believes those features are what they are said to be, 15:52:34

12 can't have much technical knowledge of it. 15:52:37

13 I base it on reading, you know, 15:52:42

14 materials submitted in this case by others. So it's 15:52:47

15 on information and belief, I believe, that a lot of 15:52:51

16 this -- and it says support, as well as draft. And I 15:52:59

17 believe these are misguided provisions in many cases. 15:53:02

18 Q. Do you know who Steven Helsley is? Does 15:53:09

19 that name ring any bells for you? 15:53:14

20 A. It does not. 15:53:23

21 Q. Are you familiar with an incident 15:53:25

22 involving an individual who was killed by law 15:53:28

23 enforcement officers, where that individual's name 15:53:32

24 was Philando Castillo, do you -- Castile? Do you 15:53:37

25 know that name? 15:53:38

1 A. Philando. 15:53:39

2 Yes -- yes, I worked as an expert 15:53:41

3 witness in that case. 15:53:42

4 Q. Can you briefly describe the services 15:53:46

5 that you provided in that case? 15:53:47

6 A. Yes. I was an expert witness on behalf 15:53:50

7 of a police officer whose name was -- last name was 15:53:56

8 Yanez, I believe, Y-A-N-E-Z, who was criminally 15:54:01

9 charged for the shooting and -- fatal shooting of 15:54:06

10 Philando Castile. 15:54:07

11 And it took place in a suburb of 15:54:12

12 Minneapolis, if I remember correctly. 15:54:16

13 Q. Do you recall what year the incident 15:54:17

14 occurred? 15:54:26

15 A. I think it was probably four years ago, 15:54:28

16 five years ago, something like that -- somewhere 15:54:31

17 between three and five years ago. I don't remember 15:54:33

18 the exact year. 15:54:36

19 Q. And do you recall that at the time of 15:54:37

20 that trial that you had testified in roughly 6% of 15:54:41

21 civil cases against law enforcement, in the three 15:54:44

22 years prior to the trial? 15:54:47

23 A. I don't remember that, if that's what 15:54:48

24 you're asking me. 15:54:58

25 MR. ECHEVERRIA: I think now would 15:55:01

1	be a good time for a little break. I know we have	15:55:03
2	been going for a quite while and Suzanne may want to	15:55:07
3	rest her -- her fingers. Does it make sense for	15:55:09
4	everyone to take a short break?	15:55:10
5	MR. LEE: That's fine.	15:55:12
6	MR. ECHEVERRIA: Does a ten minute	15:55:14
7	adjournment make sense?	15:55:15
8	MR. LEE: Ten minutes is fine.	15:55:16
9	MR. ECHEVERRIA: Okay.	15:55:16
10	MR. DILLON: And just so you know,	15:55:17
11	I will be logged off for the rest of the deposition.	15:55:19
12	I have got to take care of some other work, but	15:55:24
13	George will be on, obviously.	15:55:25
14	MR. ECHEVERRIA: Okay, John, take	15:55:26
15	care.	15:55:27
16	MR. DILLON: All right. Have a	15:55:27
17	good one. Thank you, guys.	15:55:29
18	MR. LEE: Ten minutes. And -- and	15:55:34
19	John, I am going to email you the emails that I sent	15:55:37
20	to Mr. Kapelsohn yesterday.	15:55:39
21	THE VIDEOGRAPHER: The time is now	15:55:40
22	approximately -- the time is now approximately 3:56	15:55:40
23	p.m. We are now going off the record.	15:55:46
24	(Discussion held off the record.)	15:55:46
25	THE VIDEOGRAPHER: The time is now	16:09:39

1 approximately 4:10 p.m. We are now going back on the 16:09:42
2 record. 16:09:45
3 MR. LEE: Before you continue your 16:09:47
4 examination, I -- I want to just make an observation. 16:09:51
5 It -- and this is totally no one's fault, but I think 16:09:53
6 it's a matter of the video feed or the audio part of 16:09:57
7 the video feed. It -- it trails off at the end, when 16:10:03
8 you -- when either of you are talking, and I think 16:10:07
9 that is leading you to talk over each other a little 16:10:14
10 bit, both John and Mr. Kapelsohn. 16:10:17
11 So -- and that's just from 16:10:19
12 observing it, just as a third party observer here. 16:10:23
13 So I think maybe it would be helpful if everyone just 16:10:26
14 paused because just observing it, I -- you know, if 16:10:29
15 we were all in the same room -- and happily, I'm sure 16:10:31
16 some day we will all be in the same room again for 16:10:35
17 these types of things, but, you know, it would be 16:10:37
18 natural for us to -- to be able to have more of a 16:10:40
19 conversational tone to all this. 16:10:44
20 But I think given the video feed 16:10:45
21 and the -- and the audio, the way it just sort of 16:10:49
22 cuts off the end, it -- it seems like it's an 16:10:52
23 invitation for you to jump in, but it's not really. 16:10:56
24 So I guess, my observation would be 16:10:58
25 just to, you know, give each other a slight little 16:11:00

1 pause. And Mr. Kapelsohn, if you could just try to 16:11:04
2 let Mr. Echeverria finish his question before you, 16:11:08
3 you know, begin your answer. I think that would be 16:11:10
4 helpful. 16:11:11

5 THE WITNESS: Certainly. I'm 16:11:12
6 sorry -- I'm sorry if I have not done that. I did 16:11:15
7 not mean to. 16:11:16

8 MR. ECHEVERRIA: I think it's a 16:11:16
9 great idea, George. Thank you for that. 16:11:19

10 BY MR. ECHEVERRIA: 16:11:19

11 Q. During -- during the brief break, Mr. Lee 16:11:22
12 emailed me some additional documents, Mr. Kapelsohn, 16:11:26
13 that were sent to you. They were two emails. One of 16:11:30
14 the emails had several links to examples of 16:11:34
15 featureless rifles. 16:11:37

16 I am going to mark as Kapelsohn 16:11:39
17 Exhibit 3 one of those links. 16:11:45

18 Can you see that? 16:11:51

19 A. I can. 16:11:52

20 (Kapelsohn Exhibit Number 3 was 16:11:52
21 marked for identification.) 16:11:52

22 BY MR. ECHEVERRIA: 16:11:52

23 Q. Okay. This is a printout that I just 16:11:57
24 made of a Web page for which a link was sent to you. 16:12:03

25 Do you recall seeing this page 16:12:04

1 before? It may look a little different because of 16:12:07
2 the printout, but does this look familiar at all? 16:12:11
3 A. I -- I'm not sure whether I saw this one 16:12:12
4 or not. I took a quick look at -- at what Attorney 16:12:17
5 Lee sent me, to get an idea of what was considered a 16:12:23
6 featureless rifle. I -- I -- I'm not sure I can 16:12:26
7 specifically identify this as one of the ones I 16:12:31
8 looked at. I didn't look at everything he sent me. 16:12:34
9 Q. Okay. I am going to scroll through 16:12:38
10 Kapelsohn Exhibit 3 a little bit, to some of the 16:12:41
11 other pages to see if any of the images may refresh 16:12:44
12 your recollection. 16:12:45
13 So this is Page 3 of Kapelsohn 16:12:47
14 Exhibit 3, which has images of weapons that would 16:12:53
15 qualify as assault weapons under California law. Do 16:12:58
16 you see that image? 16:12:58
17 A. I see it. 16:12:59
18 Q. Have you seen this image before? 16:13:01
19 A. I -- I may have. I think I probably saw 16:13:03
20 this one, because I remember one with labels on the 16:13:10
21 different parts of the rifle like this, and a 16:13:13
22 disclaimer like that had in the middle of it. 16:13:17
23 I -- I saw this flow chart, but did 16:13:19
24 not look at it at all. I just went on to the next 16:13:23
25 thing. 16:13:25

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1 Q. I figured the -- the flow chart may 16:13:27
2 trigger your memory a little bit better. So -- so 16:13:31
3 this may be a Web page that you did look at, after 16:13:33
4 Mr. Lee emailed you? 16:13:35
5 A. Just glanced at. I did not read anything 16:13:37
6 on this flow chart or anything below it, I don't 16:13:40
7 think. 16:13:42
8 Q. Okay. We may refer to Kapelsohn Exhibit 16:13:44
9 3 later in the deposition, as we discuss some of the 16:13:47
10 features that are listed in the Assault Weapons 16:13:50
11 Control Act. 16:13:52
12 But for now, let's return to your 16:13:55
13 declaration, which is Plaintiff's Exhibit 1. This is 16:14:04
14 Plaintiff's Exhibit 1, Page 7. 16:14:08
15 Do you see that? 16:14:09
16 A. Yes. 16:14:11
17 Q. So we are going to move forward to Page 16:14:14
18 8, which is the beginning of your opinions and 16:14:16
19 analysis, which begins on Paragraph 17. 16:14:19
20 Do you see that, sir? 16:14:21
21 A. Yes. 16:14:22
22 Q. And in the middle of Paragraph 17, 16:14:24
23 towards the bottom, you discuss the difference 16:14:27
24 between a semiautomatic and a fully automatic 16:14:29
25 firearm, is that right? 16:14:34

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1	A.	Yes.	16:14:37
2	Q.	And a fully automatic firearm is commonly	16:14:40
3		called a machine gun, is that correct?	16:14:43
4	A.	Yes.	16:14:46
5	Q.	Do you personally own any machine guns?	16:14:49
6	A.	Yes.	16:14:52
7	Q.	Approximately how many machine guns do	16:14:55
8		you personally own?	16:14:57
9	A.	I don't -- I don't think that that is	16:15:00
10		proper questioning for this purpose, unless this is	16:15:05
11		going to be sealed in some way. Because I think that	16:15:09
12		that puts me and my family at risk of criminal attack	16:15:13
13		or invasion. I -- I don't think you have to know	16:15:16
14		each and every firearm that I own.	16:15:29
15	Q.	I don't want to invade your personal	16:15:38
16		privacy, Mr. Kapelsohn. But I do note that at	16:15:41
17		Paragraph 10 of Plaintiff's Exhibit 1, you do	16:15:46
18		describe several firearms that you own, is that	16:15:58
19		correct?	16:15:58
20	A.	I believe that's correct, yes.	16:16:03
21	Q.	And you didn't have similar privacy	16:16:05
22		concerns about identifying the particular firearms	16:16:08
23		that are in your personal possession?	16:16:11
24	A.	I named several, and that's different	16:16:15
25		from asking me to list every firearm I own or how	16:16:20

1 many in total I own or anything of that sort. 16:16:25

2 Q. Do you find that providing an estimate of 16:16:27

3 the total number of machine guns that you personally 16:16:29

4 own would create a -- a risk to you and your family? 16:16:34

5 Is that your understanding? 16:16:35

6 A. That's my belief. 16:16:36

7 Q. What kind of -- what kind of risk 16:16:39

8 would -- do you believe it would pose to you and your 16:16:41

9 family? 16:16:41

10 A. I -- I don't think I need to discuss that 16:16:43

11 publicly. I think it's fairly obvious. I'm -- I'm 16:16:48

12 sorry, sir. 16:16:56

13 Q. Do you believe machine guns are useful 16:16:57

14 for self-defense? 16:16:58

15 A. In some limited circumstances, but not -- 16:17:09

16 not so much so by private individuals. I have them 16:17:12

17 for police training that I do, and police consulting 16:17:14

18 that I do. 16:17:16

19 Q. Okay. So you don't own -- you don't 16:17:19

20 personally own machine guns for self-defense 16:17:21

21 purposes? 16:17:22

22 A. That's not the primary purpose for which 16:17:25

23 I own them, no. 16:17:27

24 Q. Okay. Do you recall testifying at the 16:17:32

25 evidentiary hearing on October 19th of last year in 16:17:37

1	this case?	16:17:37
2	A. Was that the hearing in San Diego?	16:17:40
3	Q. It is.	16:17:41
4	A. Yes. I don't remember the date, but I	16:17:43
5	remember testifying in San Diego.	16:17:45
6	Q. Okay. Do you recall testifying in San	16:17:49
7	Diego about the number of rounds per second that most	16:18:03
8	shooters would be able to fire from a semiautomatic	16:18:13
9	weapon?	16:18:14
10	A. Yes.	16:18:16
11	Q. And do you recall testifying that most	16:18:18
12	shooters could fire between five and seven rounds per	16:18:21
13	second from a semiautomatic weapon?	16:18:23
14	A. I -- I don't know whether I said most or	16:18:25
15	many, but I remember saying five to seven, yes.	16:18:31
16	Q. Okay. And how -- how fast, in your view,	16:18:41
17	could most shooters fire a fully automatic weapon per	16:18:44
18	second?	16:18:49
19	A. The question doesn't make sense. Do you	16:18:52
20	mean how many rounds per second?	16:18:55
21	Q. Pardon me, yes, that's -- that's what I	16:18:57
22	meant by how fast. How many rounds per second could	16:19:01
23	an average shooter fire from a fully automatic weapon	16:19:05
24	continuously?	16:19:09
25	A. A -- a shooter could fire a fully	16:19:13

1 automatic weapon by holding the trigger depressed, 16:19:16
2 and the number of rounds per second would depend on 16:19:20
3 what is call the cyclic rate of that weapon. 16:19:24

4 So if it's a weapon that fires 900 16:19:33
5 rounds per second cyclic rate, until the magazine 16:19:38
6 runs out or the shooter takes his or her finger off 16:19:42
7 the trigger, they could be firing it 900 rounds per 16:19:46
8 second -- per minute. And you divide that by 60 16:19:50
9 seconds, and you would get the number of rounds per 16:19:52
10 second. 16:19:53

11 So it depends on the cyclic rate of 16:19:55
12 that particular weapon, not just the nominal cyclic 16:19:59
13 rate, in other words, what it would say in a book or 16:20:03
14 in the manual or something. But the cyclic rate of 16:20:06
15 fully automatic weapons depends on a lot of things, 16:20:10
16 like how well lubricated they are, how clean or dirty 16:20:14
17 they are, what kind of ammunition is being used in 16:20:16
18 them. 16:20:18

19 So for instance, I think I said 16:20:21
20 in -- in my declaration that an M-16 or M-4 rifle, 16:20:28
21 which is the fully automatic version, or select-fire 16:20:33
22 version of the AR-15, can typically fire 750 to 900 16:20:41
23 rounds per minute, cyclic rate. The reason for that 16:20:46
24 range is because weapons differ, ammunition differs, 16:20:50
25 lubrication differs, et cetera. 16:20:55

1 Q. Understood. 16:20:56

2 So your testimony is that, in 16:20:59

3 general, a fully automatic weapon can fire between 16:21:03

4 750 and 900 rounds per minute, is that accurate? 16:21:07

5 A. No, that's not. That's the specific 16:21:12

6 model of firearm that I mentioned. There are fully 16:21:15

7 automatic weapons that fire 11 or 1,200 rounds per 16:21:21

8 minute, cyclic rate. There are others that only fire 16:21:26

9 450 or 500, cyclic rate. Depends on what weapon we 16:21:31

10 are talking about. 16:21:32

11 Q. Okay. So what weapon are you talking 16:21:34

12 about, when you were referring to the 750 to 900 16:21:38

13 round -- rounds per minute range? 16:21:40

14 A. I stated that I was talking about the 16:21:43

15 M-16 or M-4. 16:21:45

16 Q. Okay. And the M-16 or the M-4 are 16:21:49

17 full -- are capable of fully automatic fire, is that 16:21:52

18 right? 16:21:52

19 A. Yes, some -- some of them are -- are 16:21:55

20 burst-fire controlled and some are not. 16:21:59

21 Q. Okay. And you also testified at the 16:22:04

22 evidentiary hearing that -- that most shooters could 16:22:09

23 fire between five to seven rounds per second with a 16:22:13

24 semiautomatic weapon for quite a while. 16:22:16

25 Do you recall that? 16:22:17

1 A. I do. 16:22:18

2 Q. And -- and you -- you standby that 16:22:19

3 testimony here today? 16:22:22

4 A. Yes. 16:22:25

5 Q. Thank you. 16:22:26

6 So Paragraph 8 of Plaintiff's 16:22:32

7 Exhibit 1, you begin talking about the AR-15 and a 16:22:38

8 the origins of the AR-15. Is that a fair 16:22:41

9 characterization of, at least, part of Paragraph 18? 16:22:45

10 A. Paragraph 18, okay. Give me a moment to 16:22:48

11 look at it, please. 16:22:50

12 Q. Sure. I've -- I've posted it for you. 16:22:54

13 It should be on your screen. 16:23:01

14 A. And the -- the question was, does this 16:23:03

15 talk about the -- the background, the history of the 16:23:05

16 AR-15? 16:23:07

17 Yes, it does. 16:23:11

18 Q. Okay. When was the AR-15 first created? 16:23:13

19 A. I -- I believe it was in the 1950s. 16:23:31

20 Q. Was the AR-15 originally created as a 16:23:35

21 weapon capable of fully automatic fire? 16:23:47

22 A. I'm not sure whether the very first 16:23:50

23 created ones were or were not. 16:23:55

24 Q. But it is your understanding that the 16:23:57

25 AR-15 became the M-16 that was issued to U.S. 16:24:03

1 soldiers during the Vietnam War, would that be 16:24:07
2 correct? 16:24:08
3 A. Correct. 16:24:09
4 Q. And then the AR-15 was subsequently sold 16:24:13
5 to civilians in the United States in a fully -- in an 16:24:17
6 only semiautomatic version, and that was the AR-15, 16:24:21
7 is that right? 16:24:22
8 A. Yes. 16:24:23
9 Q. Okay. So in your view, would you say 16:24:26
10 that the AR-15 is a semiautomatic version of the 16:24:29
11 M-16? 16:24:30
12 A. As -- as we know the AR-15 today, it is a 16:24:36
13 semiautomatic variation or version of the M-16. 16:24:46
14 Q. In the middle of Paragraph 18 of 16:24:48
15 Plaintiff's Exhibit 1, you cite the National Shooting 16:24:52
16 Sports Foundation, or NSSF. That's at Line 16. 16:24:57
17 Do you see that, sir? 16:24:58
18 A. Yes. 16:24:59
19 Q. And the NSS is -- sorry, NSSF is a 16:25:04
20 firearms industry trade group, is that right? 16:25:07
21 A. Yes. 16:25:11
22 Q. What particular information from the NSSF 16:25:15
23 did you consult, in recounting that the NSSF 16:25:21
24 estimates that there are currently between five and 16:25:24
25 10 million AR-15 rifles in civilian hands in the 16:25:29

1 United States today? 16:25:31

2 A. I don't recall. 16:25:31

3 Q. So when providing that estimate in 16:25:37

4 Plaintiff's Exhibit 1, you didn't consult any 16:25:40

5 particular documents that were produced by the NSSF, 16:25:44

6 is that correct? 16:25:44

7 A. No. I -- I wouldn't say that. What I 16:25:47

8 said is, I don't recall what documents I looked at. 16:25:54

9 Q. So you did look at documents, when you 16:25:56

10 were providing this particular estimate in 16:25:59

11 Plaintiff's Exhibit 1? 16:26:01

12 A. I -- I believe I did. I would not have 16:26:03

13 cited a specific number and cited to the NSSF if I 16:26:08

14 didn't. But I don't know what those documents are, 16:26:10

15 nor did I retain them. I -- I may have looked on -- 16:26:15

16 on NSSF's website or Internet material or something 16:26:18

17 like that. 16:26:20

18 I've more recently seen a much 16:26:22

19 higher number for modern sporting rifles, by which 16:26:25

20 they include not only AR-15s but AK type rifles 16:26:31

21 and -- and -- and some others. And the number is 16:26:35

22 something in the range of 15 or 17 million because 16:26:39

23 it -- it's -- it includes other rifles as well. 16:26:46

24 Q. Okay. But in providing the five to 10 16:26:49

25 million estimate for AR-15s in Plaintiff's Exhibit 1, 16:26:55

1 you did consult sources in coming up with that 16:26:59
2 number, right? 16:27:01
3 A. Yes, certainly. 16:27:02
4 Q. You just don't recall specifically what 16:27:04
5 sources you consulted? 16:27:06
6 A. That's correct. 16:27:06
7 Q. Okay. And you did not produce any 16:27:08
8 documents from those sources, in response to our 16:27:12
9 document requests that were included in Kapelsohn 16:27:15
10 Exhibit 1, is that right? 16:27:18
11 A. That's correct. 16:27:25
12 Q. Okay. So in providing the NSSF estimate 16:27:27
13 of the number of AR-15 rifles in civilian hands in 16:27:31
14 the United States, at least as of the date of your 16:27:34
15 declaration, would that five to seven -- five to 10 16:27:36
16 million number include AR-15 rifles sold in the State 16:27:41
17 of California today? 16:27:44
18 A. I would imagine it would. 16:27:49
19 Q. And would you also imagine that the NSSF 16:27:52
20 estimate would include AR-15 rifles sold in other 16:27:56
21 jurisdictions that have similar assault weapon 16:27:59
22 restrictions? 16:28:00
23 A. I don't -- I don't know what other 16:28:03
24 jurisdictions have similar assault weapon 16:28:06
25 jurisdictions to California. I know certain 16:28:08

1 restrictions in certain places, but I don't -- I 16:28:12
2 don't -- I don't think I can properly answer that 16:28:14
3 question the way you've asked it. 16:28:22

4 Q. So you are aware that California is not 16:28:24
5 the only state that has enacted assault weapon 16:28:27
6 restrictions? 16:28:28

7 A. I am generally aware, but assault weapon 16:28:36
8 does not have a technical definition or an agreed and 16:28:42
9 uniform meaning. It is a matter of statute. It's a 16:28:47
10 political term. It's a media term. It's -- it's not 16:28:51
11 a term that has a technical definition. 16:28:53

12 So when you say other states have 16:28:55
13 enacted assault weapon legislation, in some places 16:28:59
14 that means any weapon with a magazine that holds more 16:29:02
15 than ten rounds. And some jurisdictions, it may mean 16:29:05
16 rimfire weapons. Whereas, in California it may mean 16:29:09
17 only centerfire weapons. So I don't know how to 16:29:12
18 answer your question the way you've asked it. 16:29:16

19 Q. But you are aware that other states have 16:29:18
20 enacted statutes that define certain firearms as 16:29:21
21 assault weapons, even though their particular 16:29:24
22 definitions may vary among states? 16:29:27

23 A. That's correct. 16:29:27

24 Q. Okay. And you don't have any reason to 16:29:33
25 doubt that the NSSF estimate of five to 10 million 16:29:36

1 AR-15 rifles in civilian hands may include AR-15 16:29:40
2 rifles possessed in some of those jurisdictions? 16:29:46
3 A. It -- it may. And in some of those 16:29:49
4 jurisdictions, there's no kind of AR-15 rifle that 16:29:52
5 can legally be owned, I believe. 16:29:56
6 Q. What's the basis for that belief? 16:29:57
7 A. It's my recollection of the statute in 16:30:00
8 New Jersey, for instance, which caused people with 16:30:05
9 AR-15 rifles to have to transfer them out of state or 16:30:09
10 sell them. 16:30:18
11 Q. Was this a recent episode or not? 16:30:21
12 A. No. And I'm not sure whether the statute 16:30:23
13 remains the same or not. But when -- if you're 16:30:27
14 asking, in general, about whether I think this NSSF 16:30:32
15 estimate that I found of five to 10 million AR-15s 16:30:38
16 includes AR-15s all over the United States, wherever 16:30:42
17 they exist, regardless of what the statute might or 16:30:46
18 might not be in a given state, I think it does. 16:30:51
19 Q. Okay. And is it possible that this NSSF 16:30:56
20 estimate of five to 10 million AR-15 rifles may 16:31:01
21 include rifles possessed by law enforcement officers 16:31:05
22 in their personal capacity? 16:31:09
23 A. In their personal capacity, I -- I would 16:31:11
24 imagine it -- it could include that, yes. 16:31:14
25 Q. Could it include AR-15 rifles owned by 16:31:18

1 law enforcement officers that they purchased 16:31:22
2 themselves, and yet they use as their duty weapons? 16:31:25
3 MR. LEE: Objection. Calls for 16:31:26
4 speculation. Lacks foundation. You may answer. 16:31:30
5 A. I -- I don't know. 16:31:35
6 Q. In your view are shotguns -- 16:31:44
7 A. It's -- excuse me, I -- I need to correct 16:31:45
8 something I've said. 16:31:47
9 The figure I gave said in civilian 16:31:50
10 hands. So if it's in law enforcement hands, I'm not 16:31:54
11 sure whether that qualifies as in civilian hands. 16:31:59
12 But the fact is, I don't know how the NSSF gathered 16:32:02
13 or qualified its numbers. I don't know. It's a 16:32:06
14 number stated as an estimate by the NSSF. That is 16:32:11
15 what I -- that's what I put it across as. 16:32:14
16 Q. Okay. Thank you -- thank you for the 16:32:15
17 clarification. 16:32:16
18 In your view, are shotguns more 16:32:19
19 effective than rifles for self-defense in the hands 16:32:23
20 of an average shooter? 16:32:24
21 A. It depends greatly on the situation and 16:32:28
22 the shooter and the weapon. 16:32:34
23 Q. As a general matter, do you believe that 16:32:36
24 handguns are more effective than rifles for 16:32:40
25 self-defense? 16:32:40

1 A. Handguns are the least effective small 16:32:48
2 arms, in general, because they are the hardest to 16:32:51
3 shoot accurately. They require the highest skill 16:32:54
4 level. Skill degrades greatly under stress. 16:32:59

5 And handguns, in general, have the 16:33:02
6 least amount of power. So they are the least 16:33:05
7 effective at quickly terminating a deadly threat. 16:33:08
8 Handguns have, however, countervailing advantages of 16:33:12
9 being easily carried, easily stored in one's house or 16:33:19
10 place of business. So there are advantages and 16:33:22
11 disadvantages of each kind of firearm. 16:33:27

12 Q. Okay. So going back to Paragraph 18 of 16:33:31
13 Plaintiff's Exhibit 1, which is your declaration. 16:33:34
14 After you provide the NSSF estimate, you go on to 16:33:39
15 discuss -- pardon me -- ammunition magazines and the 16:33:45
16 various capacities of those magazines. 16:33:48

17 Do you see at Line 21 -- 16:33:50

18 A. Yes. 16:33:50

19 Q. -- on Page 9 of Exhibit 1? 16:33:52

20 A. Yes. 16:33:53

21 Q. And you -- and testify here that the most 16:33:57
22 common magazine size is 30 rounds, is that right? 16:34:01

23 A. Correct. 16:34:01

24 Q. But you also note that there are other 16:34:03
25 sizes that are available? 16:34:06

1 A. Yes. 16:34:08

2 Q. And there are magazines that are made 16:34:10

3 that are capable of holding five or ten rounds, is 16:34:15

4 that right? 16:34:16

5 A. Yes. 16:34:17

6 Q. And those magazines can be used in the 16:34:19

7 AR-15? 16:34:20

8 A. Yes. 16:34:29

9 Q. So magazines capable of holding more than 16:34:32

10 ten rounds are not necessary to operate an AR-15, is 16:34:38

11 that right? 16:34:38

12 A. No. Oh, I guess, the -- the way you 16:34:42

13 asked the question is that right, the answer is, yes, 16:34:45

14 it's right. 16:34:47

15 Q. Thank you. 16:34:56

16 So turning to Page 10 of 16:35:01

17 Plaintiff's Exhibit 1, at Line 14, you use the phrase 16:35:11

18 continuity of fire. Do you see phrase, sir? 16:35:14

19 A. Yes. 16:35:16

20 Q. What is continuity of fire, as you use 16:35:20

21 that phrase in Exhibit 1? 16:35:22

22 A. In general, it's the ability to continue 16:35:27

23 firing without lengthy interruptions. So, for 16:35:35

24 instance, we could say a semiautomatic pistol that 16:35:38

25 has 10-round or 15-round magazines has better 16:35:46

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1 continuity of fire than a five or six-shot revolver. 16:35:51
2 Both because you can fire the pistol more rounds 16:35:56
3 before you have to reload, and because the reload, 16:36:00
4 for most users, is much faster and much more reliable 16:36:05
5 under stress, than reloading a revolver, which is 16:36:08
6 slower and more difficult. 16:36:11
7 So pistols, in that sense, are 16:36:15
8 preferred by law enforcement agencies and by many 16:36:18
9 civilians for self-defense because they have very -- 16:36:21
10 better continuity of fire than revolvers do. 16:36:29
11 Q. Thank you. 16:36:29
12 At Line 26 of Page 10 of 16:36:32
13 Plaintiff's Exhibit 1, and Line 27, you refer to two 16:36:36
14 particular types of semiautomatic rifles that, in 16:36:38
15 your view, are useful for self-defense, particularly 16:36:43
16 for women and others, is that right? 16:36:47
17 A. I talk about good -- them being good 16:36:54
18 choices, yes. 16:36:58
19 Q. And you discuss the IWI -- I don't know 16:37:01
20 how to pronounce this -- 16:37:02
21 A. Tavor. 16:37:03
22 Q. Tavor. Okay. 16:37:06
23 (Kapelsohn Exhibit Number 4 was 16:37:06
24 marked for identification.) 16:37:06
25 BY MR. ECHEVERRIA: 16:37:06

1 Q. I am going to mark as Kapelsohn Exhibit 4 16:37:09
2 a printout from the IWI website, which is Israel -- 16:37:20
3 Israel Weapon Industries, which has an image of a 16:37:23
4 Tavor SAR-IDF 5.56 NATO 16.5-inch barrel. 16:37:31
5 Do you see that, sir? 16:37:32
6 A. Yes, I see the picture. 16:37:33
7 Q. So when you were discussing, in 16:37:34
8 Plaintiff's Exhibit 1, the IWI Tavor, would this be 16:37:39
9 an example of that type of firearm? 16:37:41
10 A. It's -- it's one -- one example of it. 16:37:44
11 This particular one is one that was discontinued. It 16:37:47
12 has a certain kind of sight on it, but in general, 16:37:51
13 it's a picture of a Tavor rifle. 16:37:54
14 Q. Sir, what aspects of this particular 16:37:57
15 rifle, in your view, would be beneficial for a woman, 16:38:01
16 in particular, for self-defense? 16:38:03
17 A. The thing I was talking about in my 16:38:08
18 declaration, when I referred to the Tavor and to the 16:38:13
19 Steyr AUG, or AUG, rifle are that they are bullpup 16:38:17
20 designs, meaning that the -- the mechanism is 16:38:23
21 rearward in the -- in the -- further rearward in the 16:38:26
22 rifle than is common. 16:38:28
23 And the thing that makes them very 16:38:31
24 useful is that it transfers most of the weight of the 16:38:35
25 weapon rearward. It's a short weapon overall, and so 16:38:39

1 it's not as hard for many women, who have less 16:38:44
2 upper-body strength then men often do, it's not as 16:38:49
3 hard for many women to hold those weapons in a 16:38:54
4 shouldered position, because there isn't a lot of 16:38:58
5 weight out there cantilevered out there with leverage 16:39:03
6 that makes it tiring or difficult to hold. 16:39:09
7 Q. So the -- the redistribution of the 16:39:11
8 weight towards the back of the rifle, provides an 16:39:14
9 advantage for certain individuals, is that right? 16:39:17
10 A. That's correct. And the fact that it's 16:39:18
11 shorter altogether. 16:39:21
12 Q. What are the advantages of a shorter 16:39:23
13 rifle for shelf defense? 16:39:25
14 A. Well, one of them is what I just said. 16:39:27
15 It's -- it's less tiring to hold it in a shouldered 16:39:31
16 or aimed position. Another is that it's compact, so 16:39:34
17 that it's more easily stored in one's home, in one's 16:39:39
18 place of business, in a gun safe, in a lock box, 16:39:42
19 whatever. 16:39:43
20 It's easier to move around with, 16:39:46
21 especially inside a house or some other building, 16:39:49
22 which is why people like shorter barrels on shotguns 16:39:54
23 for self-defense, than they do for clay pigeon 16:39:57
24 shooting of duck hunting or something like that. 16:39:59
25 It's easier to move through a doorway or around a 16:40:03

1 corner or though a hallway with it. 16:40:06

2 Q. Okay. So I'm -- I'm unpacking the 16:40:09

3 answer, I believe the first component that you 16:40:13

4 mentioned was that a shorter rifle is easier to hold 16:40:17

5 and aim for longer periods of time? I don't want to 16:40:21

6 put words in your mouth, but is that a fair 16:40:25

7 characterization of -- of part of the -- part of your 16:40:26

8 answer? 16:40:27

9 A. Hold -- hold in an aimed position or a 16:40:30

10 shouldered position for someone who has less 16:40:33

11 upper-body strength, which is a lot of women. It's a 16:40:37

12 lot of smaller statured men, as well. 16:40:40

13 Q. It would absolutely apply to me. But in 16:40:44

14 terms of the length of the rifle, does it depend on 16:40:49

15 the -- on the relative weight of the rifle as well? 16:40:52

16 Let me rephrase my question. You -- you appear 16:40:59

17 puzzled. Feel free if you can answer. 16:41:02

18 A. I am puzzled. 16:41:03

19 Q. Okay. So you stated that it's harder for 16:41:06

20 certain individuals to hold up a rifle in an aimed 16:41:12

21 position, if the rifle is longer, is that right? 16:41:16

22 A. Longer with weight out toward the -- the 16:41:19

23 muzzle end of it, yes. 16:41:23

24 Q. Okay. So a shorter rifle may be easier 16:41:28

25 to hold in an aimed position for a sustained period 16:41:33

1 of time? 16:41:33

2 A. Yes. 16:41:36

3 Q. Thank you. 16:41:36

4 I am also going to mark as 16:41:38

5 Kapelsohn Exhibit -- sorry, Suzanne what number are 16:41:46

6 we at? Do you know? 16:42:04

7 (Kapelsohn Exhibit Number 4 was 16:42:04

8 marked for identification.) 16:42:04

9 BY MR. ECHEVERRIA: 16:42:04

10 Q. This is going to be Kapelsohn Exhibit 4. 16:42:20

11 Kapelsohn Exhibit 4 is another printout from a Web 16:42:26

12 page. In this case, it is a -- is it pronounced 16:42:32

13 Steyr, Mr. Kapelsohn? 16:42:35

14 A. It is. 16:42:36

15 Q. Okay. So this is a printout from Steyr's 16:42:38

16 Web page and it is on Page 2 of Kapelsohn Exhibit 4. 16:42:42

17 There's an image of a firearm that is labeled Steyr 16:42:47

18 AUG A3 M-1. 16:42:51

19 Do you see that image, sir? 16:42:55

20 A. I do. 16:42:55

21 Q. And that -- that would be an image of the 16:42:58

22 bullpup rifle that you are referring to at Line 27 of 16:42:59

23 Page 10 of your declaration, right? 16:43:02

24 A. If that's the right line. 16:43:05

25 Q. Right. But this is an example of a -- a 16:43:08

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1 Steyr AUG rifle? 16:43:10

2 A. That's an example of one, yes. 16:43:14

3 Q. And in your view, this example would have 16:43:17

4 similar benefits for certain individuals for 16:43:21

5 self-defense, based on the apportionment of the -- 16:43:24

6 apportionment of the weight on the rifle, right? 16:43:28

7 A. That's correct. 16:43:29

8 Q. Okay. Are there any other advantages 16:43:33

9 then the -- or the location of the weight for 16:43:37

10 positioning the magazine behind the pistol grip on 16:43:44

11 the rifle? 16:43:52

12 A. Well, it has to be there on a bullpup 16:43:54

13 design because the mechanism is -- is -- is back 16:43:59

14 toward the buttstock area of the rifle. So it -- it 16:44:02

15 needs to be there as a design function. 16:44:07

16 Q. Okay. But aside from the technical 16:44:09

17 necessity, can you think of any advantages for 16:44:13

18 self-defense purposes provided by positioning the 16:44:16

19 magazine behind the pistol grip? 16:44:22

20 A. As I've already said, it transfers that, 16:44:24

21 and the fact that the action or mechanism is 16:44:27

22 rearward, put a great deal of the weight of the rifle 16:44:31

23 rearward, close to the body, rather than extending 16:44:35

24 forward. Someone trying to hold a heavy weight out 16:44:38

25 away from their body is obviously more tiring than 16:44:42

1	them keeping it close.	16:44:44
2	Both of the examples I gave are of	16:44:46
3	semiautomatic rifles that have a normal magazine	16:44:50
4	capacity of 20 or 30 rounds and can fire	16:44:54
5	semiautomatically and are accurate and are safe and	16:44:57
6	are easy to learn to use well.	16:45:05
7	Q. So turning back to Plaintiff's Exhibit 1,	16:45:10
8	which is your declaration, you provide seven exhibits	16:45:27
9	of articles detailing defensive gun uses, involving	16:45:32
10	the AR-15.	16:45:35
11	Is that a fair characterization of	16:45:36
12	those exhibits?	16:45:38
13	A. If -- if there are seven. I'd have to	16:45:40
14	look back through and count them, but I will take	16:45:42
15	your word that there are seven. Yes, it's a fair	16:45:45
16	characterization.	16:45:46
17	Q. Okay. And these are incidents in which	16:45:55
18	AR-15s were used in self-defense, that, in your view,	16:45:58
19	show the need for semiautomatic firearms and	16:46:01
20	magazines that hold 20 to 30 rounds of ammunition, is	16:46:06
21	that right?	16:46:06
22	A. I don't know that I would	16:46:08
23	characterization it that way. They are news items	16:46:13
24	that show that AR-15s are often used for self-defense	16:46:19
25	and in some of these cases, where there have been	16:46:22

1 multiple attackers -- and some up to six or seven 16:46:25
2 attackers, I think -- it shows the usefulness and the 16:46:29
3 importance of having a sizeable capacity. 16:46:36
4 Q. And you just testified that AR-15s are 16:46:38
5 often used in self-defense, is that right? 16:46:44
6 A. With -- with some frequency, yes. 16:46:49
7 Q. Would you describe that frequency as 16:46:51
8 often? 16:46:52
9 A. I -- I think often is a word that means 16:46:56
10 different things to different people. These are -- 16:46:59
11 these are seven examples. I'm sure I can find many 16:47:03
12 more. I'm sure there have been more examples since 16:47:07
13 the time that I wrote this declaration. 16:47:09
14 Q. And you also state in Plaintiff's Exhibit 16:47:18
15 1, that these stories explain -- explain the need for 16:47:28
16 semiautomatic firearms and magazines that hold 20 16:47:31
17 would 30 rounds of ammunition. I'm -- I'm quoting 16:47:33
18 you at Paragraph 25 of Plaintiff's Exhibit 1. 16:47:38
19 Do you see that there, sir? 16:47:45
20 A. Yes. 16:47:45
21 Q. At the -- at the bottom of Paragraph 25? 16:47:47
22 A. I see that, yes. 16:47:51
23 Q. Now, how do the seven stories that you 16:47:52
24 discuss in Plaintiff's Exhibit 1 explain the need for 16:47:57
25 magazines that hold 20 to 30 rounds of ammunition? 16:48:01

1 MR. LEE: Object. Misstates testimony. 16:48:05
2 Misstates the declaration. You -- you may answer. 16:48:09
3 A. I -- I think it does misstate my -- my 16:48:12
4 declaration and what it says and the context in which 16:48:15
5 it is said. But let's -- let's take an example or 16:48:19
6 two. 16:48:20
7 Throughout the United States, year 16:48:26
8 to year to year, police officers, trained police 16:48:31
9 officers, have a hit ratio, in shooting 16:48:34
10 confrontations, of between 20 and 30%, meaning that 16:48:41
11 70 to 80% of the shots they fire at criminals miss 16:48:46
12 entirely. 16:48:48
13 So there is no guarantee, by any 16:48:52
14 means, that a shot fired by someone will hit the 16:48:55
15 attacker at whom it is fired. 16:48:59
16 Now, we look at -- and we -- and 16:49:01
17 that occurs for many reasons, including the fact that 16:49:04
18 a great deal of criminal activity takes place in the 16:49:08
19 hours of darkness, that unlike the shooting range, 16:49:11
20 human beings are often moving, whether that is the 16:49:15
21 police officer or the criminal at whom he is 16:49:18
22 shooting, the stress level is tremendously high, the 16:49:22
23 criminal may be shooting at the police officer. 16:49:24
24 There are many reasons for that relatively low hit 16:49:28
25 ratio. 16:49:29

1 But what that means is, if -- if we 16:49:32
2 have a firearm that holds ten rounds, that doesn't 16:49:37
3 necessarily mean we can shoot at and hit ten 16:49:42
4 criminals with it, by any means. 16:49:45

5 Then we take a step further, and 16:49:47
6 that further step is that, often, rounds that hit, 16:49:52
7 fail to immediately incapacitate the criminal 16:49:55
8 attacker. Sometimes a criminal attacker has to be 16:50:00
9 shot multiple times. I have worked myself in cases 16:50:03
10 where police have fired 60 to 70 rounds at a 16:50:08
11 criminal, and it wasn't until the last round or two 16:50:11
12 that the criminal was disabled from firing back at 16:50:14
13 the officers. 16:50:16

14 Sometimes dozens of rounds have hit 16:50:18
15 the criminal but not in a vital spot. And the 16:50:21
16 criminal may be on drugs or full of adrenalin or what 16:50:26
17 have you. 16:50:27

18 So when we look at the articles 16:50:30
19 here, where three masked intruders come into a home 16:50:35
20 in Oklahoma, or five or six intruders come into a 16:50:40
21 home somewhere else and they are armed, the -- the 16:50:44
22 homeowner or the person who is there trying to defend 16:50:48
23 themselves and loved ones, may very well be 16:50:51
24 advantaged by having a firearm that has 20 or 30 16:50:57
25 rounds in it. 16:50:58

1 That's why police carry guns like 16:51:00
2 that. That's why civilians, in -- in most all of the 16:51:04
3 United States, have AR-15s and other semiautomatic 16:51:09
4 rifles that are like that, that have 20 and 30 round 16:51:13
5 magazines. Because of an understanding that that may 16:51:16
6 provide an important, in fact, a life-saving 16:51:19
7 advantage in -- in defending against criminal 16:51:22
8 attackers. 16:51:25
9 Q. Now, in some cases, a 20 to 30 round 16:51:28
10 magazine would not save the shooter, for example, 16:51:33
11 you -- you just mentioned a case in which maybe 60 16:51:36
12 rounds were fired and it wasn't towards the end of 16:51:39
13 the firing that the criminal was stopped, is that 16:51:41
14 right? 16:51:42
15 A. That's right. 16:51:44
16 Q. So what, in your mind, is the limit for 16:51:47
17 the magazine capacity that individuals need for 16:51:51
18 self-defense? 16:51:52
19 A. The -- the question you're asking is -- 16:51:56
20 is one that can't be answered. How many rounds does 16:52:00
21 someone need for self-defense? 16:52:02
22 It -- it depends on the situation, 16:52:10
23 but the fact is, common sizes of semiautomatic rifle 16:52:13
24 magazines are 20 to 30 rounds, and those are -- the 16:52:16
25 rifles are designed around magazines that hold that 16:52:21

1 much ammunition. And to say that -- that those 16:52:27
2 should be made illegal because some criminal might 16:52:30
3 use them in some criminal event, and so we are going 16:52:33
4 instead disadvantage thousands upon thousands of law 16:52:39
5 abiding citizens from having magazines of that size 16:52:43
6 doesn't make sense. 16:52:49
7 Q. You stated that some of these rifles are 16:52:50
8 designed around using magazines that hold between 20 16:52:55
9 and 30 rounds, is that what you just stated? 16:52:57
10 A. Yes. 16:53:04
11 Q. So some of these rifles require magazines 16:53:06
12 that hold between 20 and 30 rounds to operate? 16:53:10
13 A. No. 16:53:11
14 MR. LEE: Objection. Misstates his 16:53:18
15 testimony. You may go ahead and answer. 16:53:20
16 A. I didn't -- I didn't say they required 16:53:22
17 that size magazine. In fact, I answered an earlier 16:53:26
18 question of yours by saying, they don't require it. 16:53:28
19 And I have said, in my declaration, that magazines of 16:53:34
20 five rounds and ten rounds are available for the 16:53:39
21 AR-15, for instance. 16:53:40
22 Those were created afterwards. Ten 16:53:44
23 round magazines were created because of states that 16:53:50
24 prohibited larger magazines, or they were created for 16:53:53
25 shooting competitions that have stages of fire that 16:53:57

1 have ten rounds in them, same with five round 16:54:00
2 magazines. 16:54:01
3 When the AR-15 and M-16 were 16:54:03
4 created, no one thought of using them with five round 16:54:07
5 and ten round magazines. It doesn't make sense. 16:54:11
6 Q. And, Mr. Kapelsohn, that would be because 16:54:13
7 the AR-15 was originally developed for battlefield 16:54:26
8 applications in war? 16:54:33
9 A. I -- I disagree. It may have been 16:54:35
10 developed for that, but when the AR-15 was introduced 16:54:39
11 to the civilian market in semiautomatic form, it was 16:54:45
12 also provided with 20 round and 30 round magazines, 16:54:50
13 not with five round magazines. 16:54:55
14 Q. Sure. 16:54:56
15 And is it your understanding that 16:54:57
16 the 20 and 30 magazine size was the same size that 16:55:00
17 was used for the M-16? 16:55:03
18 A. They are. 16:55:10
19 Q. Okay. The civilian version of the M-16 16:55:13
20 just retained the same standard magazine capacity? 16:55:15
21 Is that -- is that a fair characterization of your 16:55:16
22 testimony? 16:55:20
23 A. I don't know if it's fair or not. But 16:55:21
24 the fact is, that it came out for public use as a 16:55:26
25 semiautomatic, typically with 20 round and 30 round 16:55:30

1 magazines. 16:55:32

2 Q. So on Paragraph 26 of Plaintiff's Exhibit 16:55:46

3 1, you discuss the penetrative capabilities of 16:55:50

4 certain types of ammunition, particularly the .223 16:55:56

5 and .556 NATO. 16:55:58

6 Do you see that? 16:55:59

7 A. I do. 16:56:04

8 Q. What prompted you to -- pardon me. 16:56:16

9 What prompted you to include 16:56:17

10 Paragraph 26 in Plaintiff's Exhibit 1? 16:56:26

11 A. I don't recall what prompted me to 16:56:27

12 include it at the time. I -- I -- I believe it's 16:56:35

13 because that is a criticism that is sometimes leveled 16:56:39

14 inappropriately against the AR-15 and -- and similar 16:56:43

15 modern sporting rifles. 16:56:45

16 Q. And -- and who -- who makes that 16:56:49

17 criticism? 16:56:49

18 A. People who want to prohibit them. People 16:56:54

19 who want to say that they are not -- not good choices 16:56:57

20 for defensive use, not good choices for self-defense 16:57:01

21 by private individuals, not good choices in someone's 16:57:04

22 ranch or home or farm. 16:57:25

23 Q. In your view, do all .223 and .556 rounds 16:57:31

24 have the same penetrative capabilities? 16:57:34

25 A. No. No. Of course not. 16:57:37

1 Q. And that would depend on -- the 16:57:39
2 penetrative capability would depend, in part, on the 16:57:43
3 firearm that is firing the round, is that right? 16:57:47
4 A. To some extent on the firearm, mainly its 16:57:50
5 barrel length. And to -- to a larger extent, on the 16:57:55
6 ammunition. 16:57:55
7 Q. So it is possible for .223 or .556 rounds 16:58:05
8 to have different penetrative capabilities, setting 16:58:07
9 aside the type of rifle being fired? 16:58:12
10 Would you agree with that? 16:58:13
11 A. Yes. 16:58:18
12 Q. Would that depend, in part, on the type 16:58:21
13 of material that is used in the casing for the round? 16:58:26
14 A. Casing meaning the cartridge case? No. 16:58:28
15 Q. Yes. 16:58:29
16 A. No. 16:58:30
17 Q. So what would -- so what -- what parts of 16:58:34
18 a cartridge would enhance or reduce the penetrative 16:58:40
19 capabilities of the round? 16:58:44
20 A. The construction of the projectile itself 16:58:47
21 is -- is primary. The -- the weight of it. What 16:58:52
22 kind of jacket it does. Does it have a soft point, a 16:58:57
23 hollow point, a ballistic tip. Does it have a steel 16:59:01
24 core because it's military ammunition made to 16:59:04
25 penetrate armor. Is it a 45 or 50 or 55 grain 16:59:11

1 bullet, or is it a 70 or 75 or 80 grain bullet. What 16:59:16
2 kind of powder, and how much powder because that 16:59:19
3 develops the velocity and that has to do with whether 16:59:23
4 the bullet fragments or expands quickly, or whether 16:59:27
5 it penetrates more deeply. 16:59:30

6 And the barrel length of the rifle 16:59:33
7 from which it's fired, has to do, also, with its 16:59:37
8 velocity because you take the same ammunition and 16:59:42
9 fire it from a longer barrel, in some cases, and get 16:59:44
10 more velocity or from a shorter barrel and get less 16:59:50
11 velocity. 16:59:51

12 Q. Sure. Yeah, I'm -- I'm trying to set 16:59:52
13 aside the differences in the firing weapon to compare 16:59:55
14 just the -- just the rounds. 16:59:56

15 You state at Line 11 of Paragraph 17:00:01
16 26, on Page 13 of Plaintiff's Exhibit 1, that you 17:00:06
17 have provided demonstrations to classes of police and 17:00:11
18 others -- 17:00:11

19 A. Yes. 17:00:12

20 Q. -- of the penetrative -- sorry, of the 17:00:15
21 penetrative capabilities of certain rounds. What 17:00:19
22 type of -- what type of rounds did you use in these 17:00:23
23 demonstrations? 17:00:24

24 A. Usually, a variety of rounds. Do you 17:00:30
25 want me to go into detail? 17:00:32

1 Q. Yes, please. 17:00:36

2 A. So with Sheetrock demonstrations, 17:00:39

3 sheetrock or plasterboard, whatever you want to call 17:00:43

4 it, typically it's a box set up with baffles that 17:00:46

5 hold small pieces of Sheetrock and you can fire a 17:00:50

6 bullet through it and -- and then go and examine and 17:00:53

7 see how many layers of Sheetrock it went through. 17:00:56

8 So that it might mean, did it go 17:00:58

9 through this wall into the next room or the next 17:01:02

10 partition into the second room away or something. 17:01:05

11 And I have done those 17:01:07

12 demonstrations using 55 grain Full Metal Jacket, .223 17:01:12

13 or .556, and hollow point or soft point rounds. 17:01:19

14 Lighter weight rounds that have a higher velocity. 9 17:01:23

15 millimeter pistol rounds, 40 caliber pistol rounds, 17:01:28

16 12 gauge buck shot and bird shot. 17:01:30

17 I've done demonstrations using all 17:01:32

18 of those things, so that the students, usually 17:01:35

19 instructors, firearms instructors in classes, can see 17:01:41

20 what these things will actually penetrate, in terms 17:01:45

21 of typical home or office construction. 17:01:55

22 Q. So of the -- of the -- when I use the 17:01:59

23 phrase intermediate rounds, do you have an 17:02:01

24 understanding of what that means? 17:02:03

25 A. I have no idea what that means. 17:02:05

1 Q. No idea? 17:02:06

2 A. Not the way you use it. I have no idea 17:02:08

3 what you mean by intermediate rounds. 17:02:18

4 Q. Of the .223 or .556 rounds that you used 17:02:22

5 in these demonstration -- the demonstrations, were 17:02:25

6 there any rounds that had greater degrees of 17:02:29

7 penetration than others? 17:02:30

8 A. I -- I believe there would be, yes. 17:02:37

9 Q. How many were there in the demonstrations 17:02:38

10 you performed? 17:02:40

11 A. I -- I believe so. But if you ask me for 17:02:42

12 specific details, I can't recall but I can tell you 17:02:45

13 which rounds would. And so I believe in 17:02:47

14 demonstrations where they were used, they did. 17:02:51

15 Q. And which rounds -- which, in -- in your 17:02:53

16 experience or in your professional judgment, which 17:02:57

17 rounds would have greater penetration than others? 17:03:00

18 A. For instance, the .556 millimeter steel 17:03:08

19 cord penetrator rounds would have more penetration. 17:03:12

20 That's a military round. It's rarely seen or used in 17:03:16

21 the civilian world, but there are some out there and 17:03:20

22 some people buy it as surplus. That would have more 17:03:24

23 penetration. 17:03:25

24 Less penetration would be the 55 17:03:28

25 grain soft-point or hallow-point rounds, and even 17:03:32

1 less penetration would be the 45 grain rounds that 17:03:37
2 some police departments use entry work and it -- they 17:03:41
3 are generally available. People use them for what is 17:03:44
4 called varmint shooting, things like prairie dogs and 17:03:47
5 similar small animals that are hunted or shot. And 17:03:52
6 those rounds are particularly -- the bullets are 17:03:56
7 particularly fragile in their construction. And so 17:04:00
8 they come apart easily in wall construction, studs, 17:04:06
9 Sheetrock and so forth. 17:04:10
10 Q. Are you familiar with the M885A1 round? 17:04:15
11 A. I am. 17:04:15
12 Q. Is that the military round that you were 17:04:17
13 referring to in your prior answer? 17:04:20
14 A. I forget if that's the designation for 17:04:21
15 the penetrator round or not. I'd -- I'd have to take 17:04:25
16 a look. I'm not positive. 17:04:27
17 Q. Thank you. 17:04:28
18 Did any of your demonstrations that 17:04:29
19 you refer to in Paragraph 26 of Plaintiff's Exhibit 17:04:33
20 1, involve demonstrations with the penetrator round 17:04:39
21 that you're referring to? 17:04:42
22 A. I can't recall right now, as I sit here. 17:04:45
23 Q. Okay. Do you believe that the phrase 17:04:53
24 assault weapon is a pejorative term? 17:05:01
25 A. Yes. 17:05:03

1 Q. Why? 17:05:05

2 A. Because it's been used that way by 17:05:09

3 legislatures, politicians and -- and media. And it 17:05:12

4 has no technical meaning in the firearms field. 17:05:17

5 In some states it can mean a .22 17:05:19

6 caliber rimfire rifle that has a tubular magazine 17:05:22

7 that holds more than a certain number of rounds. In 17:05:25

8 some states it means the same semiautomatic pistols 17:05:28

9 that people carry all throughout the United States, 17:05:32

10 with 15 and 17 round magazines. But in -- in this 17:05:35

11 particular state, whatever it is, ten rounds is the 17:05:38

12 maximum, like New York. 17:05:40

13 And in some states it means a -- a 17:05:43

14 firearm with a bayonet lug on it, although bayonet 17:05:46

15 lugs have nothing whatsoever to do with criminal use 17:05:50

16 of firearms. In some states it means firearms with 17:05:54

17 flash suppressors on the muzzle. 17:05:58

18 So it -- it's a term that someone 17:06:01

19 uses to make a firearm sound nasty. There's an 17:06:07

20 expression, one -- one man's assault weapon is 17:06:12

21 another man's peace keeping rifle. The UN carries 17:06:17

22 some of these same firearms on their peace keeping 17:06:23

23 missions. 17:06:23

24 So, yes, I think the term assault 17:06:24

25 weapon is -- if you'll pardon me -- a loaded term 17:06:28

1 that is political in nature, legislative in nature. 17:06:31

2 And legislative means whatever any given government 17:06:34

3 decides to legislate against. 17:06:39

4 It is not a technical term in the 17:06:42

5 firearms field. 17:06:43

6 Q. And you state that this term was created 17:06:44

7 by legislative draftsmen, in Paragraph 27 of 17:06:49

8 Plaintiff's Exhibit 1, is that right? 17:06:55

9 A. I think it was by legislative draftsmen 17:06:58

10 or politicians. 17:07:00

11 Q. And -- and what is the basis for your 17:07:02

12 thinking that the phase assault weapon was created by 17:07:05

13 legislative draftsmen? 17:07:09

14 A. A lifetime of experience in this field, 17:07:12

15 but you can also look at the citation there to 17:07:14

16 standards and practices reference guide, of which I'm 17:07:18

17 one of the authors. 17:07:22

18 Q. Okay. So you do cite to a source that 17:07:24

19 you are a coauthor of, is that correct? 17:07:26

20 A. Correct. 17:07:28

21 Q. Did you consult this particular -- is 17:07:30

22 this a book? 17:07:31

23 A. Yes, it's 350 pages long. 17:07:34

24 Q. Okay. And you're citing a footnote in 17:07:35

25 the book? 17:07:37

1 A. No. It's a large article in the book. 17:07:40

2 Q. I'm sorry, Mr. Kapelsohn, when you say 17:07:41

3 Page 5 ff, what does ff stand for? 17:07:45

4 A. And following. It's a standard 17:07:46

5 abbreviation. 17:07:47

6 Q. Sorry, sir, what? 17:07:52

7 A. Did you hear me? I -- I don't know if we 17:07:55

8 talked over each other, ff means -- it's a standard 17:07:58

9 abbreviation. It means and following. So Page 5 ff 17:08:02

10 means Page 5 and following. 17:08:05

11 Q. Understood. Okay. 17:08:06

12 Did you -- did you actually consult 17:08:09

13 this book or look or review this book, look at or 17:08:13

14 review this book, when you were drafting this 17:08:16

15 particular portion of Plaintiff's Exhibit 1? 17:08:19

16 A. I glanced at it. I didn't reread the 17:08:22

17 entry. It's lengthy. 17:08:23

18 Q. Okay. And you did not produce any 17:08:26

19 portion of -- of this particular book, in response to 17:08:31

20 our document request, which were included in 17:08:34

21 Kapelsohn Exhibit 1? 17:08:39

22 A. I didn't, but I have a copy of it right 17:08:41

23 here, or you can purchase a copy yourself from 17:08:45

24 IALEFI, the publisher. 17:08:48

25 MR. LEE: So -- so he did 17:08:49

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1 technically comply with your request in that he did 17:08:52
2 bring it to the deposition. 17:08:55
3 BY MR. ECHEVERRIA: 17:08:55
4 Q. Okay. It's a little -- a little hard for 17:08:58
5 me to review the book over Zoom, unless you want to 17:09:02
6 hold it up to the camera page by page, but I don't 17:09:05
7 think we want to -- 17:09:07
8 A. Well, you've -- you've had my declaration 17:09:08
9 since last fall. Are you saying that you haven't 17:09:12
10 looked at the things I cited in it? I don't 17:09:14
11 understand. Is that unfair somehow? 17:09:15
12 MR. LEE: I -- I don't think 17:09:16
13 there's a question pending, Mr. Kapelsohn. 17:09:19
14 BY MR. ECHEVERRIA: 17:09:19
15 Q. Yeah, I don't think you need to talk, 17:09:20
16 unless there's a question, Mr. Kapelsohn. 17:09:22
17 A. Good. 17:09:28
18 MR. ECHEVERRIA: Mr. Lee, would it 17:09:30
19 be possible to photocopy relevant excerpts from that 17:09:34
20 book, and send them to us so we can look at what 17:09:38
21 Mr. Kapelsohn looked at in preparing his portion of 17:09:40
22 his declaration? 17:09:41
23 MR. LEE: We can certainly attempt 17:09:43
24 to do so, endeavor. 17:09:45
25 MR. ECHEVERRIA: Okay. I 17:09:46

1 appreciate that. Thank you. 17:09:48

2 BY MR. ECHEVERRIA: 17:09:48

3 Q. So when exactly was the phrase assault 17:09:53

4 weapon created by legislative draftsmen, 17:09:56

5 Mr. Kapelsohn? 17:09:58

6 A. Couldn't tell you that. It was certainly 17:10:05

7 prior to the passage of the Federal Assault Weapons 17:10:08

8 Bill. 17:10:10

9 Q. And why do you say that? 17:10:12

10 A. Because if -- if it was called the 17:10:14

11 Assault Weapons Bill, the -- the term had to exist by 17:10:18

12 that time. 17:10:23

13 Q. And you're saying it came into existence 17:10:26

14 by politicians or legislative draftsmen? 17:10:29

15 A. I believe so, yes. 17:10:32

16 Q. Do you know when the first assault 17:10:33

17 weapons ban went into effect in the United States? 17:10:37

18 A. You're taxing my memory now. 17:10:42

19 Q. I don't -- I don't want to tax your 17:10:43

20 memory, unless you -- unless you know. I can help 17:10:46

21 you, if you'd like. 17:10:48

22 A. I -- it was in the late 1990s, wasn't it? 17:10:53

23 Q. You're correct. 17:10:53

24 The California's -- California's 17:10:56

25 Assault Weapons Control Act was enacted in 1989. 17:11:01

1 Is it your understanding? 17:11:02

2 A. I was talking about the Federal Act. 17:11:06

3 Q. So my question was not about the Federal 17:11:08

4 Assault Weapons Ban. 17:11:10

5 A. Oh. 17:11:10

6 Q. My -- my question was about any assault 17:11:13

7 weapons ban by a jurisdiction in the United States, 17:11:16

8 not necessarily the Federal jurisdiction. 17:11:19

9 California's Assault Weapons 17:11:20

10 Control Act was the first assault weapons ban in the 17:11:25

11 country enacted in 1989. 17:11:28

12 Is that your understanding? 17:11:29

13 A. I don't know when California first 17:11:30

14 enacted its assault weapons act. 17:11:35

15 Q. Okay. I'm -- I'd like to show you, 17:11:38

16 briefly, a document that has been previously marked 17:11:41

17 as Defendant's Exhibit R. It is a photocopy of an 17:11:53

18 issue of Guns & Ammo Magazine. 17:11:58

19 Can you see that, Mr. Kapelsohn? 17:11:59

20 A. I can. 17:12:02

21 Q. Are you familiar with Guns & Ammo 17:12:04

22 Magazine? 17:12:06

23 A. Generally, yes. 17:12:07

24 Q. Generally, what is it? 17:12:08

25 A. It's a -- it's a newsstand gun magazine. 17:12:11

1 Q. Okay. And can you see that on the cover 17:12:14
2 of this particular issue of Guns & Ammo Magazine, 17:12:17
3 there's a reference to the new breed of assault 17:12:21
4 rifle. 17:12:22
5 Do you see that here? 17:12:23
6 A. Yes. 17:12:28
7 Q. And on Page 2 of Defendant's Exhibit R, 17:12:32
8 can you see that the issue for this Guns & Ammo 17:12:35
9 Magazine was dated July 1981? 17:12:41
10 Can you see that? 17:12:42
11 A. Yes. 17:12:44
12 Q. And Guns & Ammo Magazine is not published 17:12:47
13 by any legislative draftsmen or politicians, right? 17:12:51
14 A. Right. 17:12:54
15 Q. So in this case, you can see the phrase 17:12:58
16 assault rifle being used by an industry publication 17:12:59
17 in 1981? 17:13:01
18 A. Yes, and that's my point. Assault rifle 17:13:03
19 does have a technical meaning, although it may or may 17:13:06
20 not be being used correctly here. That is different 17:13:09
21 from the term assault weapon, which has no recognized 17:13:12
22 technical meaning in the firearms field. 17:13:17
23 Q. Okay. So let's look a little bit further 17:13:20
24 in Defendant's Exhibit R. Here is -- not further, we 17:13:24
25 will just look at the table of contents. 17:13:25

1 You can see that there are several 17:13:27
2 different sections in this issue of Guns & Ammo, 17:13:31
3 right? 17:13:31
4 A. Yes. 17:13:32
5 Q. Section on handguns, you see that? 17:13:34
6 A. Yes. 17:13:34
7 Q. And then rifles? 17:13:36
8 A. Yes. 17:13:40
9 Q. So if we skip to the rifles section, you 17:13:43
10 can -- sorry, going back to Page 2 of Defendant's 17:13:48
11 Exhibit R, the rifle section begins on Page 48 of the 17:13:54
12 magazine. 17:13:54
13 Do you see that? 17:13:56
14 A. Yes. 17:13:58
15 Q. I am going to skip to Page 48 of the 17:14:02
16 magazine, which is part of Defendant's Exhibit R. 17:14:05
17 Do you see that? 17:14:08
18 A. Yes. 17:14:09
19 Q. And do you see the title of this 17:14:11
20 particular article, which is by Art Blatt, is 17:14:14
21 Tomorrows's State-of-the-Art Sporting Rifle. 17:14:17
22 Do you see that, sir? 17:14:22
23 A. I see that, yes. 17:14:26
24 Q. Is that this article was referring to a 17:14:28
25 fully automatic rifle? 17:14:31

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1 A. I have no idea what it is referring to. 17:14:34
2 I haven't read the article. I haven't seen it until 17:14:37
3 now. I can't read the print on this page. 17:14:40
4 Q. Oh, I'm sorry. You -- you can't -- you 17:14:41
5 can't read the print? 17:14:42
6 A. It's very small and blurry. I guess, if 17:14:45
7 I get up close, I can probably make it out. At this 17:14:49
8 distance, I can make it out. 17:14:50
9 Q. I can -- I can zoom -- I can zoom in for 17:14:53
10 you as well. If you have any difficulty seeing any 17:14:56
11 exhibits, please let me know, okay? 17:14:58
12 Beneath the photograph of the 17:15:00
13 shooter, there's a description of the weapon being 17:15:05
14 fired by that individual. Do you see that 17:15:07
15 description? 17:15:08
16 A. I see something below the picture. 17:15:10
17 Q. Can you see that it states, Colt's AR-15 17:15:15
18 is among the most popular autoloading rifles. It is 17:15:19
19 chambered for the .223 Remington, which properly 17:15:22
20 handloaded is a fine varmint cartridge? 17:15:28
21 A. I see that, yes. 17:15:31
22 Q. So is it your understanding that, at 17:15:32
23 least, part of this article was referring to a 17:15:33
24 semiautomatic rifle? 17:15:35
25 MR. LEE: Objection. Lacks 17:15:37

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1 foundation. Calls for speculation. 17:15:40

2 A. I have told you, I haven't read this 17:15:42

3 article. If you want me to read it, sentence by 17:15:45

4 sentence and ask me about each sentence, I guess you 17:15:48

5 can do that, but -- 17:15:53

6 Q. I'm not going to do that. 17:15:55

7 So on Page 1 of Defendant's Exhibit 17:15:57

8 R, where it references the new breed of assault 17:16:00

9 rifle, it's your -- it's your view that that title 17:16:04

10 might be referring to a fully automatic weapon? 17:16:08

11 MR. LEE: Objection. Lacks 17:16:10

12 foundation. Calls for speculation. 17:16:16

13 A. I don't know what it's referring to. If 17:16:18

14 it's referring to a semiautomatic AR-15, it's not an 17:16:21

15 assault rifle, by proper definition. 17:16:29

16 Q. The proper definition of an assault rifle 17:16:32

17 is that it is a fully automatic weapon? 17:16:32

18 A. Fully automatic or selective fire. It's 17:16:37

19 existed since World War II, approximately. 17:16:42

20 Q. Okay. So Guns & Ammo Magazine may have 17:16:44

21 been using that phrase improperly, if it was 17:16:46

22 referring to an semiautomatic AR-15, is that right? 17:16:48

23 A. Improperly and in a sensational way, yes. 17:17:00

24 Q. Let's return to Plaintiff's Exhibit 1, 17:17:05

25 which is your declaration. I'd like to move on to 17:17:15

1 what I view as the -- the meat of your -- of your 17:17:21
2 testimony concerning the features. 17:17:23
3 Your discussion of the features 17:17:26
4 begins on -- or begins in Paragraph 27 of Exhibit 1. 17:17:58
5 So in Paragraph 27, Mr. Kapelsohn, 17:18:00
6 of your declaration, you begin by explaining that 17:18:07
7 California Penal Code Section 30515(a)(1) identifies 17:18:12
8 several features that qualify a semiautomatic firearm 17:18:17
9 as an assault weapon, is that right? 17:18:19
10 A. Yes. 17:18:22
11 Q. And those would be the features that we 17:18:24
12 discussed previously in this deposition, when we were 17:18:27
13 looking at Kapelsohn Exhibit 2, is that right? 17:18:30
14 A. If -- if Kapelsohn 2 is the statute, yes. 17:18:34
15 Q. Thank you. 17:18:35
16 What is a pistol grip? 17:18:44
17 A. Pistol grip can mean two things, but 17:18:47
18 as -- as used here, it means a grip for one's hand 17:18:51
19 that extends downward from the stock or action of 17:18:57
20 a -- of an AR-15. And it's called a pistol grip 17:19:01
21 because it's -- it's like the grip of a semiautomatic 17:19:04
22 pistol. 17:19:04
23 Q. Are there different types of pistol 17:19:11
24 grips? 17:19:11
25 A. Yes. And there -- the other meaning of 17:19:14

1 pistol grip is the -- the grip area of a traditional 17:19:18
2 stocked sporting rifle. Sometimes that's called a 17:19:24
3 pistol grip as well. 17:19:26
4 Q. So the pistol grip of -- or the grip of a 17:19:38
5 traditional rifle, is that referred to as a straight 17:19:41
6 grip or a straight hand grip? 17:19:46
7 A. I -- I don't know. I guess it depends on 17:19:49
8 who's using those terms. 17:19:51
9 Q. Okay. So in -- in Paragraph 27 -- sorry, 17:19:59
10 moving on to Paragraph 28. 17:20:02
11 In Paragraph 28, you're 17:20:04
12 referring -- you're discussing the pistol grip 17:20:07
13 definition. And -- pardon me. In the middle of 17:20:25
14 Paragraph 28, at around Line 16, you discuss 17:20:28
15 something referred to as a straight-line design of 17:20:32
16 the M-16? 17:20:33
17 A. Yes. 17:20:34
18 Q. Do you see that? 17:20:36
19 And the straight-line design 17:20:40
20 would -- would also be part of the AR-15, right? 17:20:43
21 A. Correct. 17:20:44
22 Q. Can you describe what the straight-line 17:20:47
23 design is? 17:20:48
24 A. I can describe it or I can show you 17:20:50
25 because I have an AR-15 here in the room, with a 17:20:53

1 yellow plastic rod rubber-banded to the side of it 17:20:58
2 that makes it very easy to see what straight line 17:21:01
3 design means. 17:21:02
4 Would you like me to show you that? 17:21:04
5 Q. I think for purposes of the record, I 17:21:05
6 would like you to first describe it, if you can. 17:21:08
7 A. Straight-line design is a design in which 17:21:11
8 the barrel, and specifically the bore, of the rifle 17:21:18
9 is in a straight line with not only the chamber and 17:21:23
10 bolt of the rifle, which it has to be, but also with 17:21:27
11 the stock, the buttstock of the rifle, to where it is 17:21:32
12 supported by the user on the user's shoulder. 17:21:35
13 And that's as -- differs from a 17:21:37
14 traditional sporting rifle or sporting shotgun stock, 17:21:42
15 where the buttstock angles downward toward the user's 17:21:47
16 shoulder, and the mechanism, the action and the 17:21:50
17 barrel of the rifle are up near the user's eye. And 17:21:53
18 that's the opposite of a straight-line design. 17:21:56
19 So an AR-15, for instance, in its 17:22:00
20 traditional form, is a straight-line design rifle. 17:22:04
21 And a Mini-14 is not. 17:22:09
22 Q. And you -- you stated that the M-16 17:22:11
23 eliminated muzzle rise, due to the straight-line 17:22:17
24 design, is that right? 17:22:18
25 A. It -- it greatly reduces it. 17:22:21

1 Q. Okay. So it doesn't eliminate it? 17:22:23

2 A. Depends on the user, how the rifle is 17:22:26

3 held and so forth. 17:22:28

4 Q. Okay. 17:22:28

5 A. But the purpose of that straight-line 17:22:30

6 design is to greatly reduce or minimize muzzle rise. 17:22:36

7 Q. And in your view would a pistol grip 17:22:39

8 beneath the action of an M-16 or an AR-15 further 17:22:43

9 reduce or further minimize the muzzle rise, if the 17:22:47

10 weapon is fired repeatedly? 17:22:50

11 A. It may. I don't know. I haven't tested 17:22:52

12 that. 17:23:11

13 Q. Moving on to Page 15 of Plaintiff's 17:23:19

14 Exhibit 1, which is still Paragraph 28 of your 17:23:25

15 declaration, at Line 4, you state, because the M-16 17:23:35

16 and AR-15 have a stock which comes straight back from 17:23:39

17 the rifle's receiver to the user's shoulder, it 17:23:43

18 became necessary to provide a pistol grip that -- 17:23:47

19 that protrudes downward from the rifle's receiver. 17:23:51

20 Do you see that? 17:23:52

21 A. I -- no, I don't. I don't see where 17:23:54

22 you're reading. 17:23:55

23 Q. I'm sorry. I -- I tried to put my mouse 17:23:57

24 cursor next to it. 17:23:58

25 A. Oh. 17:23:58

1 Q. You see that? So at Line 4? 17:24:01

2 A. Yes, I see it now. 17:24:05

3 Q. So is it your view that a pistol grip is 17:24:08

4 necessary to operate a rifle with a straight-back 17:24:11

5 design? 17:24:13

6 A. No. But it's -- it's -- it's necessary 17:24:16

7 for an ergonomically good design. In other words, 17:24:22

8 there are clearly these featureless rifles in 17:24:25

9 California that exist, that can be fired. If one 17:24:29

10 practices with them enough, one can get good with 17:24:33

11 them. But it's a -- a poor design. 17:24:37

12 The reason that the AR-15 has the 17:24:39

13 pistol grip is because, as a straight-line design, it 17:24:43

14 needs you to be able to hold it lower than the 17:24:46

15 straight line because that's where your hand 17:24:50

16 naturally goes. That's where you can control the 17:24:52

17 rifle the best. That's where you don't get your hand 17:24:55

18 in the way of citing the rifle and other functions. 17:24:57

19 Q. Have you ever personally fired a 17:25:02

20 featureless AR-15? 17:25:05

21 A. I don't think so. I have fired 17:25:15

22 feature -- other featureless semiautomatic rifles. 17:25:17

23 I -- I know I fired a featureless AK, but I don't 17:25:24

24 think I fired a featureless AR-15. 17:25:31

25 Q. And in addition to the AK, can you recall 17:25:34

1 firing any other rifles that would -- sorry, in 17:25:41
2 addition to the featureless AK, have you fired any 17:25:44
3 other featureless assault weapons? 17:25:47
4 A. Well, I fired many assault weapons that 17:25:49
5 are lacking one or another or more than one of the 17:25:54
6 features. In other words, I have fired ARs that 17:26:00
7 don't have a flash suppressor, and throw out a God 17:26:05
8 awful flame and muzzle blast as a result. 17:26:08
9 I fired ARs that don't -- that 17:26:14
10 don't have the higher capacity magazines. I fired 17:26:18
11 ARs that don't have telescoping stocks or folding 17:26:22
12 stocks. So I fired many semiautomatic rifles that 17:26:26
13 are lacking various of the features that are 17:26:31
14 prohibited against. 17:26:33
15 That's how I know that they render 17:26:35
16 the rifle a disadvantageous one to use, awkward with 17:26:40
17 various faults. But whether I fired one that is 17:26:44
18 California featureless or not, that I don't think 17:26:48
19 I've done. 17:26:49
20 Q. Okay. Thank you. 17:26:54
21 In your view, can a pistol grip 17:26:56
22 help stabilize a rifle, when the rifle is fired 17:27:01
23 rapidly? 17:27:01
24 A. Yes. 17:27:02
25 Q. A pistol grip can help provide better 17:27:05

1 aim, when a semiautomatic rifle is fired rapidly? 17:27:08

2 A. Yes, because it's better ergonomically. 17:27:14

3 Q. Can a pistol grip help a shooter reload a 17:27:22

4 magazine, while keeping the rifle on target? 17:27:32

5 A. It could possibly. You can reload a 17:27:38

6 rifle that doesn't have a pistol grip very well. And 17:27:41

7 the best way to reload a rifle that has a pistol grip 17:27:46

8 is -- is by turning it somewhat to the side, to make 17:27:50

9 it easy for your support hand, your left hand if 17:27:54

10 you're a righty, to insert a magazine. 17:27:57

11 But it -- it could provide some 17:27:58

12 advantage. You could learn to reload a rifle that 17:28:01

13 either has a pistol grip or does not have a pistol 17:28:04

14 grip. 17:28:11

15 Q. At Line 24 of Page 15 of Plaintiff's 17:28:14

16 Exhibit 1, your declaration, you refer to some 17:28:18

17 antigun activists. 17:28:22

18 Do you see that phrase? 17:28:25

19 A. Yes, I see that. 17:28:30

20 Q. As you use that phrase in -- in your 17:28:32

21 declaration, what is an antigun activist? 17:28:37

22 A. People who are vehemently opposed to 17:28:42

23 private gun ownership and supportive of legislation 17:28:50

24 to ban or greatly restrict firearms, regardless of 17:28:54

25 whether the legislation makes sense or not. 17:28:59

1 Q. So in your view, is the California 17:29:01
2 Attorney General an example of an antigun activist 17:29:04
3 that you are referring to -- 17:29:09
4 A. I -- I don't -- 17:29:09
5 Q. -- in your declaration? 17:29:09
6 A. I don't know whether the California 17:29:10
7 Attorney General is or not. I don't know him 17:29:12
8 personally, nor do I know his personal views. 17:29:17
9 Q. Okay. How about President-elect Biden, 17:29:20
10 do you have any view about whether he would qualify 17:29:22
11 as an antigun activist, as you use that phrase in 17:29:25
12 your declaration? 17:29:26
13 A. I wouldn't know. I -- I was -- I was 17:29:29
14 engaged to analyze and comment on this piece of 17:29:34
15 legislation. That's what I did. 17:29:39
16 Q. I understand. 17:29:39
17 You don't have any knowledge about 17:29:41
18 any firearm policies that Vice President Biden may 17:29:44
19 have proposed, during the 2020 Presidential Campaign? 17:29:51
20 A. I've heard some things, and I -- I don't 17:29:56
21 necessarily rely on what I have heard in the media, 17:29:59
22 because often the media gets things wrong. I did 17:30:04
23 hear him say something about wanting to prohibit 17:30:08
24 magazines that hold multiple cartridges and, of 17:30:14
25 course, that's nonsensical because magazines all hold 17:30:18

1 multiple cartridges. 17:30:19

2 So that would be more indicative to 17:30:21

3 me of ignorance than of his necessary political 17:30:26

4 views. So I don't know. I guess time will tell 17:30:30

5 with -- with President-elect Biden. 17:30:32

6 Q. You could also reflect that he may have 17:30:35

7 just misspoke at that time, right? 17:30:39

8 A. I don't know how one misspeaks about 17:30:41

9 magazines that hold multiple cartridges. Did he mean 17:30:45

10 multiple magazines that hold no cartridges, or -- I 17:30:48

11 don't know what that would -- misspeaking would be. 17:30:51

12 MR. LEE: I will just interpose the 17:30:53

13 objection. Calls for speculation. 17:31:01

14 BY MR. ECHEVERRIA: 17:31:01

15 Q. So you attribute to some antigun 17:31:04

16 activists the claim that a pistol grip allows a rifle 17:31:08

17 to be quote, unquote, spray fired, is that right? 17:31:12

18 A. Yes, sir. 17:31:13

19 Q. What is it spray firing, as you use that 17:31:21

20 phrase in your declaration? 17:31:22

21 A. Beats me. Except if it means kind of 17:31:26

22 firing wildly in all directions, which is what I said 17:31:32

23 here. And I quoted it because I have seen it in 17:31:35

24 writing for years now, in various antigun and 17:31:43

25 legislative promoting materials from antigun people. 17:31:47

1 So I don't know what it means, except for what I 17:31:49
2 said, wildly in all directions. 17:31:54
3 Q. Okay. But you -- you have seen this 17:31:56
4 spray firing claim in -- in writing? 17:31:59
5 A. Absolutely. More than once. 17:32:06
6 Q. When you refer to spray firing in your 17:32:08
7 declaration, did you consult anything in writing or 17:32:10
8 were you just relying on your recollection that this 17:32:14
9 is a claim that you have seen in the past? 17:32:16
10 A. I'm relying -- was relying on my 17:32:17
11 knowledge of what I have seen in the past. 17:32:25
12 Q. Is that different from your recollection? 17:32:31
13 I just -- I just want to make -- you seemed to 17:32:33
14 correct me. 17:32:34
15 A. I think we are -- I guess, knowledge 17:32:45
16 means certain recollection. Meaning, it's not like 17:32:48
17 something I think I remember. It's my knowledge 17:32:50
18 of -- of the kinds of claims that have been made. 17:32:55
19 Q. Okay. In Paragraph 29 of Plaintiff's 17:33:05
20 Exhibit 1, you discuss thumbhole stocks, is that 17:33:11
21 right? 17:33:11
22 A. Yes. 17:33:12
23 Q. And thumbhole stocks would be one of the 17:33:14
24 features listed in California Penal Code Section 17:33:16
25 30515(a)(1), which we have marked as Kapelsohn 17:33:23

1	Exhibit 2?	17:33:24
2	A. If that's the right place.	17:33:29
3	Q. Okay. Would a thumbhole stock provide	17:33:33
4	similar ergonomic benefits to a pistol grip	17:33:36
5	protruding conspicuously beneath an action of a	17:33:40
6	rifle?	17:33:41
7	A. It -- it could, depending on the design	17:33:44
8	of the particular thumbhole stock.	17:33:53
9	Q. And depending on the particular design of	17:33:55
10	the thumbhole stock, a -- a thumbhole stock could	17:33:58
11	help stabilize a rifle in rapid firing?	17:34:02
12	A. Yes, or in slow firing or in accurate	17:34:13
13	target shooting.	17:34:25
14	THE VIDEOGRAPHER: The time is now	17:34:26
15	approximately 1:25 [SIC] p.m. We are now going off	17:34:29
16	the record.	17:34:48
17	(A brief recess was taken.)	17:34:48
18	THE VIDEOGRAPHER: The time is now	17:40:26
19	approximately 5:41 p.m. We are now going back on the	17:40:31
20	record.	17:40:34
21	BY MR. ECHEVERRIA:	17:40:34
22	Q. Mr. Kapelsohn, what is a folding or	17:40:37
23	telescoping stock?	17:40:40
24	MR. LEE: Well, objection.	17:40:42
25	Compound.	17:40:43

1 MR. ECHEVERRIA: Let me restate. 17:40:46

2 BY MR. ECHEVERRIA: 17:40:46

3 Q. Mr. Kapelsohn, what is your understanding 17:40:48

4 of what a folding stock is? 17:40:51

5 A. A folding stock is a stock that is hinged 17:40:55

6 or pivoted, and it typically folds either along the 17:41:00

7 side -- it's the buttstock we're talking about, 17:41:04

8 the -- the rear portion of the stock. Typically 17:41:05

9 either folds alongside the rifle or shotgun or over 17:41:11

10 the top of it or under the bottom of it. 17:41:16

11 Q. And what is a telescoping stock -- 17:41:19

12 A. Telescoping -- 17:41:20

13 Q. -- to your understanding? 17:41:21

14 A. Telescoping stock, again, we're talking 17:41:23

15 about the buttstock of -- of -- of the rifle or 17:41:26

16 shotgun. And it is typically tubular in -- in nature 17:41:34

17 at least its center membrane is tubular. And it 17:41:38

18 pulls out to various positions to lengthen it and 17:41:43

19 pushes in, like an old-fashioned telescope that, you 17:41:47

20 know, you would see in a pirate movie or something 17:41:50

21 like that. Where it moves out and moves in. 17:41:55

22 Q. Sure. Mr. Kapelsohn, you froze for me 17:41:58

23 for a bit. 17:41:59

24 MR. ECHEVERRIA: Did you freeze for 17:42:00

25 Mr. Lee as well, or is that a problem on my end? 17:42:03

1 MR. LEE: I -- I don't know if it 17:42:04
2 was freezing, but I definitely -- we lost the audio 17:42:07
3 for just a second or two. 17:42:09
4 MR. ECHEVERRIA: Yeah, I -- I 17:42:09
5 didn't mean freezing, I meant that the audio went 17:42:11
6 out. 17:42:12
7 MR. LEE: It could be -- it could 17:42:13
8 be that Mr. Kapelsohn may have blocked the 17:42:15
9 microphone, when he was gesturing. That might be -- 17:42:20
10 I don't know. But, yeah, we did lose it. 17:42:23
11 BY MR. ECHEVERRIA: 17:42:23
12 Q. Would you minded restating your answer, 17:42:27
13 Mr. Kapelsohn? 17:42:28
14 A. Telescoping stock, we are referring, 17:42:29
15 again, to the buttstock of a rifle or a shotgun or 17:42:33
16 other shoulder weapon. And it telescopes to greater 17:42:39
17 lengths or pushes in to smaller lengths. It 17:42:43
18 typically has tubular -- a tubular center component 17:42:46
19 and an -- an outer section that fits around the 17:42:51
20 tubes. 17:42:51
21 And in the same fashion as an 17:42:55
22 old-style telescope that you might see in a pirate 17:42:58
23 movie or something like that, it pulls outward to 17:43:02
24 greater length or pushes inward to shorten it. 17:43:07
25 Q. And in your experience -- I -- I know it 17:43:08

1 would vary from stock to stock, but in your 17:43:12
2 experience generally, what is the length that a stock 17:43:17
3 can increase, when it's fully deployed versus fully 17:43:20
4 closed? 17:43:22
5 A. Oh, I don't know that I've measured it 17:43:27
6 precisely, but we're typically talking about 17:43:31
7 something like a six-inch difference perhaps, six -- 17:43:36
8 five, six, seven, eight inches, something like that. 17:43:41
9 Q. Okay. What is a fixed stock? 17:43:44
10 A. A fixed stock is one that is neither 17:43:47
11 folding nor telescoping. 17:43:50
12 Q. And are fixed stocks available for the 17:43:54
13 AR-15 rifle? 17:43:56
14 A. Yes. 17:43:58
15 Q. Are fixed stocks generally available for 17:44:00
16 other types of semiautomatic rifles? 17:44:04
17 A. Yes, many of them. 17:44:09
18 Q. And I believe that you wrote, in your 17:44:12
19 declaration, that one of the rifles that you 17:44:16
20 personally own has a fixed stock, is that right? 17:44:19
21 A. Yes. 17:44:24
22 Q. Was that an -- can you -- can you remind 17:44:25
23 me what weapon you were referring to? 17:44:27
24 A. I -- I think probably I was referring to 17:44:29
25 the AR-15 that I'm qualified and authorized to use by 17:44:35

1 my sheriff's department, which is a personally owned 17:44:38
2 AR-15, but it has a fixed stock. 17:44:44
3 Q. So it is your personal AR-15 with a fixed 17:44:52
4 stock? 17:44:53
5 A. Correct. 17:45:01
6 Q. Why did you -- did you choose to have 17:45:02
7 that AR-15 have a fixed stock? 17:45:08
8 A. I'm not sure I chose it. It -- it just 17:45:10
9 came about. It's -- I have a number of AR-15s. I 17:45:18
10 have them for different purposes in different 17:45:21
11 locations. That's one that has been my sheriff's 17:45:26
12 department rifle for years and years and years. And 17:45:29
13 it happens to have a fixed stock on it. 17:45:33
14 I didn't have an immediate need for 17:45:34
15 a shorter stock, although sometimes it would be 17:45:37
16 helpful. But it's just the rifle that I have for 17:45:44
17 that purpose. 17:45:47
18 Q. And -- and fixed -- fixed stocks are 17:45:49
19 available in different lengths, is that right? 17:45:54
20 A. Yes. 17:45:57
21 Q. So when you acquired the AR-15 that you 17:45:58
22 have been discussing with me just now, did it come 17:46:02
23 with a fixed stock of a given length, or did you 17:46:08
24 choose the length for the fixed stock, when you 17:46:10
25 acquired it? 17:46:12

1 A. We're talking about many years ago, but I 17:46:14
2 believe it's the stock that this rifle came with 17:46:17
3 because I don't recall ever specifying a different 17:46:20
4 length of fixed stock on any AR-15 that I purchased. 17:46:29
5 Q. And you haven't felt the need to change 17:46:31
6 the fixed stock of that AR-15 to an adjustable stock? 17:46:36
7 A. Not on that particular rifle, no. 17:46:45
8 Q. In Paragraph 30 of Plaintiff's Exhibit 1 17:46:47
9 towards the bottom of Page 16, you cite U.S. 17:46:52
10 Department of Justice -- the U.S. Department of 17:46:57
11 Justice Bureau of Justice Statistics, and you cite a 17:47:00
12 special report from that agency. 17:47:03
13 Do you see that? 17:47:04
14 A. Yes. 17:47:04
15 Q. This would be Line 26 -- 17:47:06
16 A. Yes. 17:47:07
17 Q. -- on Page 16 -- 17:47:08
18 A. Yes. 17:47:09
19 Q. -- of Plaintiff's Exhibit 1? 17:47:11
20 A. Yes. 17:47:17
21 Q. Thank you. 17:47:18
22 And you state, in your declaration, 17:47:19
23 that this Bureau of Justice Statistics Special Report 17:47:24
24 NCJ251776 reports that prison inmates used handguns 17:47:33
25 in 18.4% of their crimes, is that right? 17:47:38

1 A. Is that on the next page because I don't 17:47:40
2 see it on the page we're on? 17:47:43
3 Q. It is. I'm sorry, yes. I am going to 17:47:44
4 skip to the next one. There you go. 17:47:52
5 A. I see that. 17:47:53
6 Q. And you also state that that report 17:47:54
7 reported that prison inmates used rifles in 1.5% of 17:48:00
8 their crimes, right? 17:48:01
9 A. Yes. 17:48:03
10 Q. Now the population that was surveyed for 17:48:05
11 purposes of that report was the -- was a sample of 17:48:10
12 the prison inmate population, right? 17:48:14
13 A. That's my understanding. 17:48:15
14 Q. So it would not account for all crimes, 17:48:20
15 is that right? 17:48:23
16 A. I guess just the ones who got 17:48:25
17 incarcerated, and just the -- the sampling that was 17:48:30
18 taken of them. 17:48:30
19 Q. And it would not include, for example, 17:48:33
20 individuals who commit mass -- a mass shooting -- I'm 17:48:39
21 sorry, the -- 17:48:39
22 This report would not take into 17:48:43
23 account crimes committed by individuals who may have 17:48:47
24 perished during the commissions of their crimes, 17:48:50
25 right? 17:48:53

1 A. That's correct. 17:48:53

2 Q. And that would include mass shooters, 17:48:55

3 some mass shooters? 17:48:57

4 A. Some mass shooters perish. Some mass 17:49:01

5 shooters are arrested. Some mass shooters give up. 17:49:04

6 Q. Are you aware of the percentage of mass 17:49:08

7 shootings that involve the use of rifles? 17:49:12

8 A. Oh, I think I have been aware of it, but 17:49:14

9 I don't remember the numbers right now. 17:49:19

10 Q. And have you also been aware of the 17:49:21

11 percentage of mass shootings that involved the use of 17:49:25

12 semiautomatic rifles, like the AR-15? 17:49:28

13 A. Again, I -- I believe I have known those 17:49:31

14 statistics, but I don't know them -- I don't have 17:49:33

15 them current in my head right now. 17:49:36

16 Q. And when I use the phrase mass shootings, 17:49:41

17 do you generally understand what I'm referring to? 17:49:42

18 MR. LEE: Objection. Lacks 17:49:45

19 foundation. Calls for speculation. 17:49:47

20 A. I -- I certainly don't know what you're 17:49:49

21 referring to. I know how the term is generally used. 17:49:53

22 I can't purport to be inside your head. 17:49:58

23 Q. Okay. Well, I -- I just want to make 17:49:59

24 sure that we're on the same page, when -- when I'm 17:50:02

25 using the phrase mass shooting. 17:50:05

1 So when I use the phrase mass 17:50:07
2 shooting, I'm referring to a shooting incident in 17:50:10
3 which more than -- in which four or more individuals 17:50:13
4 are killed. 17:50:14

5 Is -- is that the same definition 17:50:16
6 that you're working with generally? 17:50:19

7 A. I've worked with a lot of definitions 17:50:21
8 because the FBI has one. The Secret Service has a 17:50:25
9 different one. The Department of Homeland Security 17:50:28
10 has a different one. As whether we're talking about 17:50:31
11 mass shootings or active shooter incidents, they all 17:50:35
12 have different definitions. 17:50:36

13 But if you want it to be four or 17:50:39
14 more, I understand that that is how you're using it. 17:50:42

15 Q. And in your prior answer, you were -- you 17:50:45
16 stated that you have been aware or you have seen 17:50:51
17 statistics concerning the use of rifles and AR-15s in 17:50:55
18 mass shootings, is that right? 17:50:57

19 A. I believe so, yes. 17:50:59

20 Q. So when you provided that answer, what 17:51:01
21 definition of mass shootings was -- were you using? 17:51:04

22 A. Not -- not any specific definition. 17:51:12

23 Q. Okay. But -- but going forward, just so 17:51:14
24 we are -- just so we are on the same page, when I 17:51:16
25 refer to mass shootings, I'm -- I'm referring to mass 17:51:21

1 casualty incidents in which four or more individuals 17:51:24
2 are killed in the course of the shooting, okay? 17:51:26
3 A. Well, you just changed your definition. 17:51:28
4 Q. How did I change it, sir? 17:51:30
5 A. Because you've now included mass casualty 17:51:33
6 incidents, and I don't know what that means. If you 17:51:37
7 mean incidents in which -- 17:51:38
8 Q. Okay. Is that the -- 17:51:40
9 A. Excuse me? 17:51:41
10 Q. So excise that additional verbiage from 17:51:44
11 the definition I just provided. So that, from here 17:51:46
12 on out, when I use the phrase mass shooting, I'm 17:51:49
13 referring to a shooting incident in which four or 17:51:54
14 more individuals are killed. 17:51:56
15 Do you understand that? 17:51:58
16 A. Yes, but may I ask then, do you mean to 17:52:00
17 include domestic disputes, robberies, any incident in 17:52:06
18 which four or more people are killed? 17:52:08
19 Q. I'm sorry, what was that? You're telling 17:52:12
20 me I need to do something? 17:52:13
21 A. No, I'm asking you. If you're asking me 17:52:16
22 to adopt your definition, I want to make sure I 17:52:19
23 understand it. I'm asking, do you mean to include 17:52:21
24 domestic disturbances, in which one family member 17:52:28
25 kills three others and commits suicide? Do you mean 17:52:32

1 to include armed robberies in which four people are 17:52:35
2 killed? Or do you mean -- 17:52:35
3 Q. I don't think I've excluded any 17:52:36
4 situations from the definition I have provided. But 17:52:39
5 if I'm referring to a mass shooting, that is in a 17:52:44
6 public place, that is not connected to any other 17:52:46
7 crimes, I will specify that. 17:52:48
8 I know that there are many 17:52:49
9 different definitions of mass shootings, but when I'm 17:52:52
10 referring to mass shootings, I'm referring generally 17:52:54
11 to incidents in which four or more individuals are 17:52:57
12 killed in a shooting, okay? 17:52:58
13 A. Okay. And did -- did -- did you say that 17:53:00
14 you mean to limit it now to public places? 17:53:03
15 Q. No, I'm saying that in -- sometimes, when 17:53:07
16 we're referring to mass shootings, we may discussing 17:53:12
17 mass shootings that occur in a public place and I 17:53:14
18 will specify that. 17:53:15
19 Have you reviewed the declaration 17:53:17
20 of Lucy Allen that was provided in this case? 17:53:26
21 A. I think I have, but I don't recall it 17:53:27
22 now. 17:53:28
23 Q. Did you review the declaration of Louis 17:53:32
24 Klarevas that was submitted in this case? 17:53:37
25 A. I don't know. 17:53:37

1 Q. Are you aware of a compilation of public 17:53:42
2 mass shootings that was compiled by Mother Jones? 17:53:55
3 A. I -- I have heard of it, yes. I'm not 17:53:57
4 aware of its details. 17:54:01
5 Q. Okay. So in Paragraph 32 of Plaintiff's 17:54:11
6 Exhibit 1, you discuss grenade launchers and flare 17:54:19
7 launchers, is that right? 17:54:21
8 A. Yes. 17:54:22
9 Q. And you state that the provision in 17:54:26
10 California Penal Code Section 30515 concerning 17:54:31
11 grenade launchers is quote, unquote, largely 17:54:34
12 superfluous, is that right? 17:54:39
13 A. I think that's what I said, yes. Yes. 17:54:41
14 That's -- those are the words. I see them now. 17:54:44
15 Q. And why -- why is that largely 17:54:47
16 superfluous? 17:54:49
17 A. Because, as I explained, destructive 17:54:51
18 devices are controlled Federally. 17:54:58
19 Q. Do grenade launchers have any 17:55:01
20 self-defense utility, in your view? 17:55:04
21 A. Not that I know of. 17:55:14
22 Q. Have you ever seen a semiautomatic -- 17:55:16
23 A. Well, excuse me. Not for the launching 17:55:17
24 of grenades, I don't think those have a normal 17:55:20
25 self-defense utility for civilian use. For launching 17:55:25

1	tear gas or something else they might.	17:55:33
2	Q. So in your view, tear gas may have a	17:55:35
3	self-defense utility?	17:55:38
4	A. Pepper spray, pepper -- you know,	17:55:41
5	oleoresin capsicum, it might -- it does obviously	17:55:45
6	have a self-defense utility.	17:55:55
7	Q. Have you ever seen a rifle with a grenade	17:55:58
8	launcher affixed to it?	17:56:00
9	A. Many times.	17:56:01
10	Q. Would these be rifles that are used in	17:56:04
11	the military?	17:56:05
12	A. Yes.	17:56:09
13	Q. Are they rifles that may be used by law	17:56:11
14	enforcement agencies?	17:56:13
15	A. Possibly. I can't recall whether I have	17:56:20
16	seen such a rifle in use by law enforcement, but	17:56:22
17	certainly by the military.	17:56:25
18	Q. Have you seen a civilian rifle with a	17:56:29
19	grenade launcher affixed to it?	17:56:36
20	A. I have seen rifles with what purport to	17:56:43
21	be grenade launchers. In other words, simulations of	17:56:50
22	grenade launchers, but not actual grenade launchers,	17:56:54
23	I don't think, in the civilian sector.	17:56:56
24	Q. Okay. You also discuss flare launchers	17:57:01
25	in Paragraph 32 of Plaintiff's Exhibit 1, is that	17:57:04

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1	right?	17:57:05
2	A. Yes.	17:57:05
3	Q. And you -- and you testify, in Paragraph	17:57:08
4	32, that flare launchers may have legitimate safety	17:57:12
5	and rescue purpose, is that right?	17:57:15
6	A. Yes.	17:57:16
7	Q. Would that also apply to flare launchers	17:57:19
8	that are affixed to a semiautomatic rifle?	17:57:23
9	A. It could.	17:57:24
10	Q. Have you ever seen a rifle with a flare	17:57:27
11	launcher affixed to it?	17:57:29
12	A. I don't know.	17:57:34
13	Q. Okay. In Paragraph 33, on Page 18 --	17:57:37
14	A. Well, excuse me. When you say, have I	17:57:40
15	ever seen a rifle with a flare launcher -- I have	17:57:43
16	seen military rifles used to launch flares. So if	17:57:48
17	we -- if we separate military and say, have I ever	17:57:50
18	seen a flare launcher on a civilian rifle, I don't --	17:57:55
19	I don't think so.	17:57:55
20	Q. Okay. Thank -- thank you for that	17:57:57
21	clarification.	17:57:58
22	On Page 18 of Plaintiff's Exhibit	17:58:00
23	1, Paragraph 33, we move on to the flash suppressor	17:58:04
24	feature, is that right?	17:58:06
25	A. Yes.	17:58:07

1 Q. What is a flash suppressor, in your 17:58:09
2 understanding? 17:58:10
3 A. A flash suppressor is a device at the end 17:58:14
4 of the barrel, in this case of a rifle, that has 17:58:22
5 slots or holes in it designed typically to -- well, 17:58:29
6 in the most general sense, to suppress the -- the 17:58:33
7 amount of muzzle flash that would occur. 17:58:36
8 It does it, typically, by dividing 17:58:39
9 that flash, by dividing the burning powder gases into 17:58:42
10 separate smaller flames, rather than have a large 17:58:47
11 flame come out the muzzle of the rifle in dim light. 17:58:54
12 Q. Can -- can a flash suppressor also hide a 17:58:59
13 flash in low-light conditions? 17:59:02
14 A. It could. And some people call them 17:59:04
15 flash hidere, but it's rare that it actually 17:59:08
16 completely hides it, to the point where you can't see 17:59:12
17 at all. Usually, it suppresses it, which is why I 17:59:16
18 use the term flash suppressor rather than flash 17:59:18
19 hider. 17:59:20
20 Q. And even in circumstance in which a flash 17:59:23
21 suppressor may not completely eliminate the flash, or 17:59:27
22 completely hide the flash, it may make the flash 17:59:30
23 appear to be at different locations? 17:59:33
24 Would you agree with that 17:59:34
25 statement? 17:59:36

1 A. I -- I have trouble understanding how 17:59:38
2 that would be. I understand that it suppresses it, 17:59:45
3 makes it smaller. I'm not sure how it makes it look 17:59:49
4 like it's in different locations. 17:59:51
5 Q. Well, you testified that a flash 17:59:53
6 suppressor breaks up the flash into different smaller 17:59:58
7 flashes, is that right? 18:00:00
8 A. Yes. 18:00:01
9 Q. And is it your understanding that a flash 18:00:03
10 suppressor diverts those smaller flashes to the side 18:00:07
11 of the weapon versus forward? 18:00:11
12 Would you agree with that? 18:00:13
13 A. The side, the top, sometimes down. 18:00:15
14 Although -- although many flash suppressors have a 18:00:19
15 solid section downwards, so that if you're in a prone 18:00:22
16 position, close to the ground, there isn't gas 18:00:25
17 kicking up dust and sand. 18:00:29
18 But, yes, it -- it divides the 18:00:31
19 flash into several pieces. That doesn't mean it 18:00:34
20 makes it look like it's down the block or something 18:00:36
21 like that. Just instead of one big flash, you get 18:00:39
22 several small ones. 18:00:41
23 Q. Sure. I -- I wasn't -- I wasn't saying 18:00:43
24 that it would be that far away. But could a flash -- 18:00:48
25 could a flash suppressor make it more difficult to 18:00:51

1 identify the precise location of a shooter in 18:00:53
2 low-light conditions? 18:00:55
3 A. Yes, that's one reason the military uses 18:00:59
4 them. 18:01:01
5 Q. Can a flash suppressor help mitigate 18:01:04
6 muzzle rise, when a rifle is fired rapidly? 18:01:07
7 A. Typically not. The slots are not 18:01:11
8 designed to -- to do much about muzzle rise. That 18:01:15
9 would be a muzzle brake. That's B-R-A-K-E, or a 18:01:21
10 compensator. 18:01:34
11 Q. You provide an image, in Exhibit 12 to 18:01:39
12 Plaintiff's Exhibit 1, of a flash suppressor. Maybe 18:01:44
13 it's not Exhibit 12. Exhibit 14, pardon me. This is 18:01:56
14 going to be Exhibit 14 for you. I don't know why the 18:02:01
15 image is blown up like this. 18:02:02
16 MR. LEE: Because we didn't inherit 18:02:05
17 Zoom, like the Court of Appeals insists upon, so I 18:02:09
18 apologize. 18:02:11
19 MR. ECHEVERRIA: Oh, it's okay. 18:02:13
20 BY MR. ECHEVERRIA: 18:02:13
21 Q. Do you see that image, Mr. Kapelsohn? 18:02:15
22 A. Yes. 18:02:17
23 Q. okay. And this is an image of an 18:02:20
24 AR-STONER Flash Hider, right? 18:02:24
25 A. Yes, or -- or a flash suppressor. It's 18:02:27

1	what is called an A2, as it says. It's a very	18:02:30
2	commonly used one.	18:02:32
3	Q. Okay. And the A2 appears to have four --	18:02:35
4	it has five vents around it. Is that right?	18:02:39
5	A. I think it has five, yes.	18:02:43
6	Q. And you would agree that at least one of	18:02:46
7	the vents is at the 12:00 position on the suppressor,	18:02:52
8	right?	18:02:53
9	A. Correct.	18:02:55
10	Q. If the weapon -- if a semiautomatic	18:02:58
11	weapon is fired with a suppressor like this, the	18:03:03
12	discharge of the flame out of the top vents of the	18:03:08
13	flash suppressor would have a downward affect on the	18:03:12
14	firearm.	18:03:12
15	Would you agree with that?	18:03:14
16	A. A slight -- yes, very slight, yes. May I	18:03:19
17	explain?	18:03:20
18	Q. And a slight downward force --	18:03:22
19	A. May I explain?	18:03:24
20	Q. And -- and the slight downward force	18:03:28
21	could help mitigate muzzle rise when that weapon is	18:03:32
22	fired.	18:03:33
23	Would you agree with that?	18:03:34
24	A. The -- the effect on muzzle rise is very,	18:03:37
25	very minimal. These are large slots. A compensator	18:03:41

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1 or muzzle brake has engineered slots that vent 18:03:48
2 high-pressure gases in a way that they effectively 18:03:52
3 reduce muzzle rise. This doesn't do that. 18:03:57
4 If -- if this did that effectively, 18:04:00
5 there wouldn't be all the market that there is for 18:04:03
6 compensators and muzzle brakes, which are completely 18:04:06
7 different than this. So, yeah, is there some effect, 18:04:09
8 yes. For every action, there's an equal and opposite 18:04:12
9 reaction. 18:04:14
10 So to the extent that one -- one 18:04:16
11 small part of the flame goes upward with gas going 18:04:19
12 upward, there's a downward impulse, yes. But it's 18:04:24
13 very, very minimal. 18:04:25
14 Q. Is it possible to have a flash hider that 18:04:31
15 also serves as a muzzle brake or as a compensator? 18:04:35
16 A. Yes, I think so. 18:04:45
17 Q. So in Paragraph 33, you describe the 18:04:49
18 major advantages of a flash suppressor on a rifle 18:04:52
19 barrel, and that begins at Line 12, right? 18:04:56
20 A. I can't see. You've got to put it up for 18:04:58
21 me, please. 18:04:59
22 Q. I will absolutely do that for you. Let's 18:05:02
23 go back. I'm going to go to Page 18, Paragraph 33. 18:05:17
24 Starting at Line 11, you begin, the major 18:05:20
25 advantages -- or the first full sentence is, the 18:05:22

1 major advantages of a -- a flash suppressor. 18:05:25

2 Do you see that, sir? 18:05:26

3 A. Yes, sir. 18:05:27

4 Q. And you state at number -- at Number 1, a 18:05:29

5 flash suppressor can reduce the muzzle flash, so as 18:05:34

6 not to temporarily blind the shooter, right? 18:05:37

7 A. Yes. 18:05:38

8 Q. The reduction in muzzle flash would apply 18:05:40

9 to a civilian AR-15, just as it would apply to a 18:05:44

10 military issued M-16, right? 18:05:47

11 A. Yes, sir. 18:05:47

12 Q. Okay. The second advantage that you 18:05:50

13 identify is the reduction of muzzle flash from a 18:05:53

14 military rifle, so as to minimize the illumination of 18:05:58

15 the shooter, right? 18:06:00

16 A. Yes. 18:06:00

17 Q. And this is the flash hiding effect that 18:06:02

18 we were discussing previously? 18:06:03

19 A. Yes, sir. 18:06:04

20 Q. Why do you say that this advantage in the 18:06:07

21 reduction of muzzle flash to -- to minimize the 18:06:10

22 illumination of the shooter is an advantage for a 18:06:14

23 quote, unquote military rifle, at Line 15? 18:06:18

24 A. That's the context in which it's 18:06:20

25 primarily important. 18:06:23

1 Q. But it is possible for the flash hiding 18:06:25
2 effect to benefit a shooter who is firing a civilian 18:06:30
3 rifle like an AR-15, right? 18:06:35
4 A. It's possible, but it's unlikely to be 18:06:38
5 significant. 18:06:39
6 May I explain? 18:06:42
7 Q. Absolutely. 18:06:44
8 A. In a -- in a military context, you may 18:06:48
9 have gunfire coming from all directions, lots of 18:06:52
10 noise. Your -- your side is firing. The enemy is 18:06:56
11 firing. Artillery shells may be going off. Hand 18:07:01
12 grenades may be exploding. Sound becomes a difficult 18:07:05
13 means of identifying the direction, the location of 18:07:10
14 the enemy. 18:07:11
15 And now, you've got enemy troops 18:07:15
16 firing from, sometimes, hundreds of meters away. In 18:07:18
17 the edge of the forest or the jungle or whatever, in 18:07:27
18 vegetation. Very hard to determine where they are 18:07:29
19 firing from. 18:07:30
20 But if you have got a rifle squad 18:07:33
21 shooting at you from three or four hundred meters 18:07:37
22 away, and you can see all of those flashes, you know 18:07:41
23 where the enemy is. 18:07:43
24 In -- in the civilian context, in 18:07:46
25 the self-defense use of an AR-15, we're rarely 18:07:51

1 talking about, even as great a distance as 50 or 75 18:07:55
2 yards, let alone hundreds and hundreds of yards. 18:08:00
3 There isn't all that noise. There 18:08:02
4 aren't artillery shell going off. We don't have a 18:08:06
5 squad of shooters firing from here, and a machine gun 18:08:09
6 firing next to our ear. If someone is shooting at us 18:08:12
7 from over there, we can tell where that sound is 18:08:15
8 coming from. So can the police. 18:08:18
9 The idea that this flash hider or 18:08:21
10 flash suppressor is going to make this an -- an ideal 18:08:25
11 weapon for criminal use because the police won't know 18:08:28
12 where the person is shooting from, is -- is just -- 18:08:32
13 it's just fantasy land. It's not the case. 18:08:41
14 MR. ECHEVERRIA: Suzanne, what was 18:08:42
15 the particular question I asked. 18:09:01
16 (The reporter read the referred-to 18:09:01
17 portion of the record.) 18:09:01
18 BY MR. ECHEVERRIA: 18:09:01
19 Q. Okay. And -- and -- and then 18:09:30
20 Mr. Kapelsohn explained. 18:09:31
21 So Mr. Kapelsohn, in -- in 18:09:38
22 situations in which a civilian is using an AR-15 for 18:09:42
23 criminal purposes, is it possible that a flash 18:09:47
24 suppressor may -- may help them hide their position 18:09:53
25 from law enforcement in low-light conditions? 18:09:57

1 MR. LEE: Objection. It's an 18:09:59
2 incomplete hypothetical. You may answer. 18:10:03
3 A. Depending on all the details of the 18:10:06
4 circumstance, which you haven't provided, almost 18:10:08
5 anything is possible. But you are saddling the 18:10:14
6 thousands and thousands of law-abiding users of the 18:10:18
7 rifle, with the rifle that blinds them when fired in 18:10:22
8 low-light conditions. In -- 18:10:26
9 Q. Mr. Kapelsohn -- 18:10:27
10 A. In return for a potential ability to 18:10:30
11 identify some criminal's location in some situations. 18:10:35
12 Q. Mr. Kapelsohn, I -- I appreciate your 18:10:38
13 views on the subject, but my question is not asking 18:10:40
14 you to compare the costs and the benefits of 18:10:42
15 prohibiting a flash suppressor. I'm asking you very 18:10:46
16 specific questions about potential applications of a 18:10:49
17 flash suppressor in criminal use, okay? It's -- it's 18:10:51
18 helpful to answer the particular questions I'm 18:10:53
19 asking, so that we can finish this in a timely 18:10:56
20 fashion. 18:10:57
21 MR. LEE: Well, Mr. Echeverria, he 18:10:59
22 is answering your question. You might not like the 18:11:01
23 answer. You can make a Motion to Strike, but he is 18:11:04
24 answering your question. 18:11:05
25 MR. ECHEVERRIA: I'm not saying 18:11:06

1 whether I like his answers or not. I'm saying I want 18:11:09
2 him to answer my questions. 18:11:11
3 BY MR. ECHEVERRIA: 18:11:11
4 Q. So moving on, you state in Paragraph 33 18:11:16
5 at Line 19 -- pardon me, at Line 16, that a flash 18:11:25
6 suppressor also serves to protect the muzzle of the 18:11:28
7 rifle from dirt, mud, sand, et cetera, which can 18:11:31
8 dangerously plug the muzzle, if it were to touch the 18:11:36
9 ground outdoors, is that right? 18:11:37
10 A. Correct. 18:11:38
11 Q. Is a flash suppressor necessary to 18:11:40
12 protect the muzzle from dirt, mud, sand or other 18:11:44
13 debris? 18:11:45
14 A. In many cases, it is. If you say, is 18:11:48
15 there some other kind of device we can come up with, 18:11:52
16 which could serve that purpose, maybe there is. I 18:11:55
17 don't know. But flash suppressors are commonly 18:11:58
18 viewed as having that advantage. 18:12:00
19 The military uses them that way, 18:12:03
20 and various civilian instructors teach that they be 18:12:06
21 used that way. 18:12:08
22 Q. Okay. So let's take the muzzle brake 18:12:10
23 that we were referring to previously. 18:12:13
24 Can a muzzle brake have that same 18:12:16
25 benefit of protecting a barrel from dirt, mud, sand 18:12:20

1 or other debris? 18:12:21

2 A. Possibly or possibly not, depending on 18:12:25

3 its design. 18:12:26

4 Q. Is it possible that a flash suppressor 18:12:27

5 may not provide that benefit? 18:12:31

6 A. Depends on all the circumstances, the 18:12:34

7 details of which you are not providing to me. 18:12:36

8 Q. Okay. Well, when you write in your 18:12:39

9 declaration that the flash suppressor also serves to 18:12:41

10 protect the muzzle of the rifle from dirt, mud, sand 18:12:45

11 et cetera, you're not taking into account any 18:12:48

12 particular circumstances of the flash suppressor or 18:12:50

13 the dimensions of the rifle, is that right? 18:12:53

14 A. I'm taking into account the general 18:12:55

15 normal use of a rifle and normally available, 18:12:58

16 commonly available flash suppressors, and one of the 18:13:03

17 advantages they provide, which is this. If you say 18:13:07

18 to me, can I imagine some situation in which it 18:13:10

19 doesn't help? 18:13:11

20 Yeah, if you plunge the barrel of 18:13:14

21 the rifle six inches down into the mud, the flash 18:13:18

22 suppressor won't be sufficient to keep the barrel 18:13:22

23 from being plugged. And when you fire the rifle, the 18:13:24

24 barrel will probably burst. But that is not a usual 18:13:27

25 situation. 18:13:27

1 In the usual use of a rifle, its 18:13:30
2 barrel bumps against and touches against many things, 18:13:33
3 including the ground, the snow, the sand, the mud. 18:13:36
4 And flash suppressors provide protection because they 18:13:39
5 have such big openings. 18:13:42
6 Q. I -- I understand that. 18:13:43
7 So in the normal use of a rifle 18:13:45
8 with a muzzle brake instead of a flash suppressor, 18:13:49
9 would the muzzle brake provide a similar benefit of 18:13:52
10 protecting the barrel from debris? 18:13:54
11 A. Maybe, maybe not is what I said to you, 18:13:57
12 depending on the design. Many muzzle brakes have 18:14:00
13 very small holes in them, unlike the huge holes in 18:14:04
14 the flash suppressor. And they have a small opening 18:14:08
15 at the end that the bullet comes out, unlike the huge 18:14:12
16 hole in the end of the flash suppressor. 18:14:14
17 So many muzzle brakes would not 18:14:16
18 provide as good protection as the flash suppressor 18:14:18
19 does, in this regard. 18:14:21
20 Q. Okay. But other muzzle brakes may 18:14:25
21 provide comparable advantages in this regard, right? 18:14:30
22 A. I think I have answered your question, as 18:14:31
23 well as I can, sir. 18:14:35
24 You want to keep arguing with my 18:14:36
25 answer, but I think I've answered your question. 18:14:39

1 Q. I'm not arguing with your answer. I'm 18:14:41
2 trying to understand why your testimony concerning 18:14:44
3 flash suppressors in your declaration assumes normal 18:14:48
4 use, in which a benefit is provided. But when I'm 18:14:52
5 asking you about a muzzle brake, you're assuming 18:14:53
6 potential situations that -- that may undermine the 18:14:58
7 advantage. 18:14:58

8 I'm not understanding why you're 18:15:00
9 answering the questions differently. 18:15:02

10 A. Because they are different structures of 18:15:04
11 devices. And as I said to you in my last answer, 18:15:08
12 many muzzle brakes have very small angled holes. 18:15:12
13 They don't have the big open slots that flash 18:15:16
14 suppressors have. They don't have the big opening in 18:15:19
15 the end, some of them, that flash suppressors have. 18:15:22
16 So they don't provide this kind of benefit and 18:15:25
17 protection. 18:15:27

18 Q. So the benefit in -- so let me understand 18:15:30
19 what the benefit is, and maybe I'm not understanding 18:15:33
20 it. 18:15:33

21 Is the benefit that there is an 18:15:35
22 increased -- or that there's a buffer between the end 18:15:39
23 of the barrel and the ground, or is the benefit that 18:15:43
24 there are large vents that would allow debris to 18:15:46
25 escape the barrel if -- if the debris happens to get 18:15:50

1	into it?	18:15:51
2	Do you understand my question?	18:15:52
3	A. Yes. And the -- and the benefit is both.	18:15:54
4	Q. Okay. And a muzzle brake would increase	18:15:57
5	the distance between the barrel and the ground, if a	18:16:01
6	rifle was pointing downwards, right?	18:16:04
7	A. Sometimes yes, and sometimes muzzle	18:16:06
8	brake -- sometimes compensator holes are cut right in	18:16:09
9	the barrel. But if it's an add-on device, yes, it	18:16:13
10	increases the distances.	18:16:14
11	Q. Okay. And that would provide a benefit	18:16:17
12	of protecting the barrel from -- from debris getting	18:16:19
13	into the barrel, right?	18:16:23
14	A. Not effectively. It -- the -- because	18:16:27
15	many of the muzzle brakes have much smaller holes and	18:16:32
16	a smaller muzzle opening, if -- if you bump them into	18:16:36
17	the mud or something like that, they fill with that	18:16:40
18	and a high pressure situation can be created by that.	18:16:44
19	Unlike something like that A2	18:16:45
20	Birdcage flash suppressor that has huge openings and	18:16:50
21	a huge hole in the end that is several times the	18:16:54
22	dynamometer of a 5.56 millimeter bullet coming out.	18:17:00
23	It's a different level of protection that is	18:17:02
24	provided.	18:17:02
25	Q. And the larger holes in the flash	18:17:07

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1 suppressor don't increase the possibility that debris 18:17:11
2 may enter the barrel? 18:17:12
3 A. We're talking about how easily debris can 18:17:16
4 blow out of them, when you fire, rather than creating 18:17:20
5 an over-pressure situation that causes a burst barrel 18:17:23
6 with potential injury to the shooter and others 18:17:28
7 nearby. 18:17:28
8 Q. Are there other devices that can be 18:17:32
9 affixed to the barrel of a rifle that can minimize 18:17:35
10 the likelihood that dirt, mud, sand or other debris 18:17:39
11 can enter the barrel? 18:17:41
12 A. I'm -- I'm sure there must be, but these 18:17:48
13 are the two kinds of devices that are commonly 18:17:51
14 affixed to the end of a barrel, other than a sound 18:17:54
15 suppressor. 18:17:58
16 Q. Are you familiar with any -- any form of 18:18:01
17 caps that can be affixed to the tip of a barrel to 18:18:05
18 prevent any objects from entering the barrel? 18:18:07
19 A. Yes. And they blow you off, when you 18:18:09
20 fire the first shot. The military and others provide 18:18:12
21 a plastic cap that covers the flash suppressor at the 18:18:16
22 end of the barrel, for instance. But when you fire 18:18:18
23 the first shot, that cap blows off, blows apart. So 18:18:22
24 it's good for one shot. 18:18:24
25 Q. Okay. And those caps can be available 18:18:27

1 for rifles that do not have flash suppressors, right? 18:18:31

2 A. They might be. I haven't seen them. But 18:18:34

3 they might be. Or you could use a piece of tape or 18:18:37

4 something like that. It's not as effective, and it's 18:18:39

5 gone with the first shot. 18:18:44

6 Q. At Line 23 of Page 18 of Plaintiff's 18:18:48

7 Exhibit 1, you discuss law enforcement statistics 18:18:52

8 that indicate that a high percentage of violent crime 18:18:57

9 occurs during hours of darkness or in otherwise 18:19:00

10 darkened environments, poorly lighted indoor areas, 18:19:05

11 for example, is that right? 18:19:07

12 A. Yes, sir. 18:19:07

13 Q. And you cite, in support of this 18:19:09

14 statement, Exhibit 15 attached to your declaration, 18:19:13

15 which is an article from Security Magazine, right? 18:19:18

16 A. Yes, I see that. 18:19:21

17 Q. Okay. So I am -- I am just curious. I 18:19:24

18 would like to turn to Exhibit 15, just briefly. If 18:19:32

19 we can zoom in again. 18:19:34

20 Can you see that? 18:19:35

21 A. I see it. 18:19:36

22 Q. All right. And this is the article that 18:19:37

23 you were citing? 18:19:39

24 A. Yes. 18:19:43

25 Q. Do you see at the bottom -- I covered it 18:19:45

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1	up.	18:19:45
2	Do you see at the bottom of the	18:19:48
3	page -- there we go -- do you see at the bottom of	18:19:51
4	the page it states, The Crimes at Night: Analyzing	18:19:59
5	Police Incident Reports in Major Cities reveals that	18:20:03
6	violent crimes occur mostly -- or most often at	18:20:06
7	night, is that right?	18:20:07
8	A. I -- I can't see what you're reading from	18:20:09
9	and your -- your picture appears on my screen	18:20:11
10	overlapping this article. So maybe that's the	18:20:13
11	problem. I don't know.	18:20:15
12	Q. Oh, no. Okay. I will zoom out. It's	18:20:19
13	going to be -- it going to reduce the size of the	18:20:21
14	font.	18:20:22
15	A. I can read it.	18:20:23
16	Q. Okay. You see how it references that	18:20:26
17	violent crimes occur most -- most often at night?	18:20:30
18	A. Yes.	18:20:32
19	Q. And then on the next page, you have a	18:20:35
20	breakdown of crimes committed at night versus day?	18:20:39
21	A. Yes.	18:20:41
22	Q. Where in this article does it state that	18:20:45
23	most crimes occur during night or in otherwise	18:20:50
24	darkened environments? Where does this article	18:20:54
25	reference darkened environments?	18:20:55

1 A. That's not from this article. That's 18:20:59
2 from my knowledge of things like the New York City 18:21:01
3 Police Department, analysis of police combat 18:21:03
4 situations, the so-called SOP 9 summaries that come 18:21:07
5 out annually. The FBI's Uniform Crime Report. 18:21:13
6 I cited one article on this general 18:21:16
7 proposition. This -- the fact that between 18:21:21
8 two-thirds and three-quarters of defensive firearms 18:21:25
9 use happens in poorly-lit environments is shown by 18:21:29
10 study after study after study, for decades that I 18:21:33
11 have been working in this field. 18:21:34
12 So I cited one article and it 18:21:37
13 doesn't tell everything. But it certainly supports 18:21:41
14 the main thing, which is that most violent crime 18:21:44
15 occurs during the hours of darkness. 18:21:46
16 Q. What is a forward pistol grip? 18:21:53
17 A. A forward pistol grip, sometimes called a 18:21:58
18 vertical foregrip, is a grip on the front, toward the 18:22:03
19 front, in the -- coming down from the fore-end of a 18:22:06
20 rifle, that is vertical or more or less vertical that 18:22:09
21 let's someone hold it there, rather than wrapping 18:22:13
22 their hand around the fore-end of the rifle in a 18:22:16
23 more -- more conventional fashion. 18:22:18
24 Q. And in -- in your view, what is the 18:22:21
25 benefit to someone firing a rifle in self-defense on 18:22:25

1 a forward pistol grip? 18:22:28

2 A. Some people find it more comfortable. 18:22:32

3 They find it allows them to control the rifle better. 18:22:34

4 If they are shooting from a prone position, or any 18:22:37

5 kind of supported position over a surface, like over 18:22:42

6 a table top, over a bench, over the hood of the car, 18:22:45

7 they can actually use the vertical foregrip to 18:22:50

8 support the fore-end of the rifle. 18:22:52

9 I don't personally prefer them, but 18:22:54

10 that's a personal matter. Many people do prefer 18:22:57

11 them. 18:22:58

12 Q. Okay. So in that case, the forward 18:22:59

13 pistol grip would operate, in affect, as a monopod? 18:23:03

14 A. It can operate as a monopod, that is 18:23:07

15 correct. 18:23:07

16 Q. Okay. Can a forward pistol grip also 18:23:11

17 help stabilize a rifle, if it's fired rapidly? 18:23:14

18 A. Probably. It depends on who is shooting 18:23:19

19 it and what the circumstances are. You understand, 18:23:23

20 we're -- we're talking about human performance and 18:23:28

21 human skill levels. Though -- so there are certainly 18:23:32

22 some people who can shoot a rifle without a vertical 18:23:36

23 foregrip and stabilize it in rapid fire better than 18:23:42

24 some other people using a vertical foregrip. It 18:23:44

25 depends a great deal on the shooter, the rifle, the 18:23:47

1 kind of ammunition, the circumstances. 18:23:50

2 Q. Sure. And -- and your testimony in this 18:23:51

3 declaration, Plaintiff's Exhibit 1, about the 18:23:54

4 self-defense utility of various features would also 18:23:58

5 depend on those various factors as well, right? 18:24:02

6 A. Yes. 18:24:03

7 Q. Okay. You reference the mass shooting at 18:24:13

8 Virginia Tech, is that right? 18:24:16

9 A. I believe I did. 18:24:19

10 Q. And in the Virginia Tech shooting, the 18:24:21

11 perpetrator used two handguns, is that right? 18:24:24

12 A. I believe it was two. 18:24:27

13 Q. Is it your understanding that the 18:24:28

14 perpetrator also used what California law defines as 18:24:31

15 large capacity magazines in the perpetration of his 18:24:36

16 crimes? 18:24:37

17 A. I believe he did. I also believe that 18:24:41

18 some of the magazines might not have been loaded to 18:24:45

19 full capacity. And I do recall, from the materials, 18:24:48

20 that he came with basically a whole bag, like a 18:24:51

21 shoulder bag full of magazines. And he reloaded many 18:24:55

22 times. 18:24:56

23 So it wouldn't really matter very 18:24:57

24 much what the exact capacity of the magazine was. 18:25:06

25 Q. Okay. Yeah, I didn't ask you whether it 18:25:07

1 would have mattered. But thank you for the 18:25:11
2 additional detail. 18:25:12
3 Are you aware of any -- any other 18:25:15
4 mass shootings, in which semiautomatic rifles were 18:25:18
5 involved? 18:25:22
6 A. When you say any other -- 18:25:30
7 MR. LEE: Yes, I think we were 18:25:31
8 just -- we just jumped on the same thing. 18:25:34
9 Mr. Echeverria, you said any other. 18:25:36
10 That implies that the prior example involved a rifle. 18:25:40
11 So I will object to the form. 18:25:41
12 MR. ECHEVERRIA: I -- I will 18:25:42
13 restate my question. I -- I didn't want to imply 18:25:44
14 that the mass -- that the Virginia Tech shooting 18:25:46
15 involved a rifle. I was referring to other mass 18:25:50
16 shootings. 18:25:51
17 BY MR. ECHEVERRIA: 18:25:51
18 Q. Are you aware of any mass shootings 18:25:54
19 involving a semiautomatic rifle being used by the 18:25:58
20 perpetrator of the -- of the shooting? 18:26:00
21 A. Certainly. 18:26:06
22 Q. So you're aware of the Columbine High 18:26:09
23 School shooting? 18:26:09
24 A. Yes, I'm aware of it. 18:26:11
25 Q. The Pulse Nightclub shooting? 18:26:14

1	A.	Yes.	18:26:15
2	Q.	The Parkland shooting?	18:26:17
3	A.	Yes.	18:26:19
4	Q.	The Las Vegas shooting?	18:26:22
5	A.	Yes.	18:26:23
6	Q.	San Bernardino?	18:26:25
7	A.	Yes.	18:26:27
8	Q.	Did all of those shootings, to your	18:26:29
9		knowledge, involve semiautomatic rifles?	18:26:35
10	A.	I'm not sure I remember what kind of	18:26:37
11		firearms were used in the San Bernardino shooting,	18:26:41
12		but several of the others certainly involved	18:26:44
13		semiautomatic rifles.	18:26:45
14	Q.	So you're not aware that the two	18:26:46
15		individuals who committed the San Bernardino shooting	18:26:50
16		were armed with AR-15s?	18:26:52
17	A.	I don't recall that right now. I don't	18:26:53
18		recall exactly what they were armed with.	18:26:56
19	Q.	Okay. So Paragraph 35 and -- and	18:27:03
20		elsewhere in your declaration, you use the phrase	18:27:06
21		cosmetic features, right?	18:27:08
22	A.	Yes, sir.	18:27:08
23	Q.	I know -- I will pull it back for you.	18:27:12
24		Let's go back to Paragraph 35.	18:27:13
25		Do you recall using the phrase	18:27:21

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1 cosmetic features in your declaration? 18:27:27

2 A. Yes, sir. 18:27:27

3 Q. And on Line 20 of Page 19 of Plaintiff's 18:27:30

4 Exhibit 1, you refer to quote, unquote, evil-looking 18:27:33

5 cosmetic features, right? 18:27:37

6 A. Yes. 18:27:37

7 Q. What do you mean by evil-looking cosmetic 18:27:40

8 features as -- as you use that phrase in this portion 18:27:44

9 of your declaration? 18:27:46

10 A. I guess I mean the same thing that the 18:27:48

11 Judge used in the hearing I was at, when he said 18:27:51

12 makes them look scary, doesn't it? And I said, yes. 18:27:55

13 You know, some -- some people think 18:27:59

14 that -- that these features make something look like 18:28:04

15 a military weapon or like a quote, unquote, machine 18:28:08

16 gun or like an assault weapon and, of course, you 18:28:10

17 have defined it as such. So it -- so it becomes 18:28:13

18 that. 18:28:14

19 Rather than something that a law 18:28:17

20 abiding person would have or use for target shooting, 18:28:20

21 even though they're used in the national matches 18:28:23

22 every year. Or hunting or predator control on 18:28:30

23 someone's ranch or farm or for self-defense or for 18:28:33

24 collecting. 18:28:35

25 I use cosmetic, not in the sense 18:28:38

1 that these features don't have functions. In fact, 18:28:42
2 this whole declaration by me, in large part, explains 18:28:46
3 the useful and legitimate function of many of these 18:28:51
4 features. 18:28:51

5 So by cosmetic, I don't mean that 18:28:54
6 they don't have legitimate purposes and functions. 18:28:56
7 What I mean is, this legislation seems to have 18:29:02
8 criminalized these features based on their cosmetic 18:29:05
9 appearance. Because as -- at least, in my opinion, 18:29:09
10 as stated in this declaration, many of these features 18:29:12
11 have no criminal use, no -- no special advantage to 18:29:17
12 criminals as opposed to law-abiding gun users. 18:29:30

13 Q. Are you familiar with the shooting that 18:29:34
14 occurred in Poway, California in 2019? 18:29:38

15 A. Was that the one that involved some kind 18:29:41
16 of a -- a -- a religious -- was it a synagogue or a 18:29:46
17 Jewish daycare center or something like that? 18:29:48

18 Q. The shooting occurred in a synagogue, 18:29:50
19 yes, that's correct. 18:29:52

20 A. I -- you know, again, I look at so many 18:29:53
21 of these things. I don't remember the specific of 18:29:56
22 details of that, unless you remind me of them. But 18:29:59
23 I'm aware that there was a shooting at the Poway 18:30:00
24 synagogue. 18:30:03

25 Q. Are you aware that the shooter in the 18:30:06

1 Poway incident was equipped with a California 18:30:10
2 compliant featureless AR platform rifle? 18:30:15
3 A. I -- I might have been aware of that. 18:30:17
4 Again, I -- I look at these things on a continuing 18:30:20
5 basis. I don't memorize all the details of each one. 18:30:25
6 Q. Are you aware that the -- that the 18:30:27
7 shooter in the Poway incident armed himself with 18:30:31
8 several ten round California compliant ammunition 18:30:33
9 magazines? 18:30:36
10 A. Not aware -- not -- I'm not aware of 18:30:38
11 that, as I sit here right now. Whether I read it at 18:30:42
12 the time or since that time, I can't tell you. 18:30:48
13 Q. And -- and do you recall that the shooter 18:30:49
14 in the Poway incident, after emptying his first ten 18:30:54
15 round magazine, attempted to reload the rifle and was 18:30:57
16 not able to resume firing so he had -- he left? 18:31:00
17 MR. LEE: Objection. Lacks 18:31:01
18 foundation. Assumes facts. You -- you may answer, 18:31:05
19 if you remember. 18:31:09
20 A. I -- I don't know that right now, and I 18:31:13
21 don't know whether I did know that or at what point 18:31:16
22 in time I knew that. 18:31:17
23 Q. Okay. My -- my question was about your 18:31:19
24 knowledge. So I wasn't assuming any facts, I wanted 18:31:22
25 to know what you knew. Thank you. 18:31:24

1 At Paragraph 36 of Page 20 of 18:31:28
2 Plaintiff's Exhibit 1, you discussed barrel shrouds, 18:31:34
3 is that right? 18:31:35
4 A. Yes. 18:31:38
5 Q. I believe we briefly discussed it, but 18:31:41
6 what -- actually I don't think we did. 18:31:42
7 What is a barrel shroud? 18:31:46
8 A. A barrel shroud is a piece of material, 18:31:49
9 typically sheet metal, that covers some portion of 18:31:54
10 the barrel. Usually it -- it has a stand-off 18:31:59
11 distance from the barrel. It has air space between 18:32:02
12 the barrel and the shroud. The shroud often has 18:32:05
13 holes in it or slots in it to prevent -- to -- excuse 18:32:10
14 me, to allow heat to escape. 18:32:11
15 And the purpose of a barrel shroud 18:32:13
16 on most any weapon, a rifle, a shotgun, what have 18:32:19
17 you, is that if someone is firing a -- a great many 18:32:24
18 shots in rapid succession, and the barrel of the 18:32:27
19 firearm heats up, the barrel shroud keeps your hand 18:32:31
20 from touching the barrel and -- and keeps you from 18:32:35
21 burning your hand on the barrel of a gun. 18:32:40
22 Q. And wouldn't an advantage of a barrel 18:32:42
23 shroud in that case allow a shooter to continue 18:32:45
24 firing accurately, notwithstanding the increase in 18:32:51
25 heat of the barrel? 18:32:52

1 A. No, not especially because you're 18:32:55
2 typically not holding a gun by its barrel to fire it, 18:33:00
3 especially not a hand gun. You're holding it by the 18:33:03
4 grips. 18:33:13
5 Q. Okay. So a barrel shroud -- a barrel 18:33:21
6 shroud -- when -- when would a barrel shroud be 18:33:22
7 beneficial to a shooter then? 18:33:24
8 A. It -- it prevents you from being burned 18:33:27
9 when your hand inadvertently contacts the barrel of a 18:33:33
10 gun. You typically don't hold a gun by its barrel to 18:33:39
11 fire it, whether that's a rifle a shotgun or a 18:33:44
12 handgun. 18:33:44
13 Q. I understand that. 18:33:45
14 A. But the barrel can get hot. And if you 18:33:48
15 don't have something there protecting, and your hand 18:33:51
16 happens to touch the barrel, you get burned. 18:33:53
17 Q. It's kind of like, you know, after you 18:33:54
18 turn your car off and you lift up the hood, it may be 18:33:56
19 really hot after you turn the car off? 18:33:59
20 A. That's correct. They -- they are very 18:34:00
21 common on military rifles and shotguns, which are 18:34:04
22 fired automatically or at a very high rate of fire. 18:34:10
23 Q. So in normal use, a -- a shooter would 18:34:12
24 not be holding the barrel with their non-dominant 18:34:18
25 hand, right? 18:34:19

1 A. Typically not. There are some techniques 18:34:21
2 where you do, but they are rare. 18:34:24
3 Q. Okay. But there are techniques where 18:34:25
4 someone may be using their non-dominant hand to hold 18:34:30
5 the barrel during firing? 18:34:31
6 A. Usually braced, barricade competition 18:34:35
7 shooting techniques, things like that with handgun. 18:34:39
8 Q. And you -- you testify, in Paragraph 36, 18:34:51
9 that barrel shrouds on handguns are mainly a cosmetic 18:34:55
10 feature, right? 18:35:02
11 A. I believe so. 18:35:03
12 Q. So it is not your testimony that barrel 18:35:04
13 shrouds have a self-defense utility, right? 18:35:09
14 A. They do keep you from burning your hand. 18:35:19
15 Q. Then wouldn't that make that an important 18:35:21
16 tactical feature? 18:35:22
17 A. It could be, yes. 18:35:32
18 Q. Okay. In Paragraph 37 of Plaintiff's 18:35:34
19 Exhibit 1, you discuss pistol grips on handguns, 18:35:39
20 vertical foregrips and flash suppressors, is that 18:35:44
21 right? 18:35:44
22 A. Yes. 18:35:45
23 Q. So this is in connection with some of the 18:35:47
24 features that are described in California Penal Code 18:35:49
25 Section 30515 related to pistols, right? 18:35:54

1 A. If -- if that's the right section you're 18:35:56
2 citing. I'd -- I'd have to look at it, but I assume 18:36:00
3 you're citing the right section. 18:36:02
4 Q. Okay. Well, we can turn to it really 18:36:04
5 quick. This is Kapelsohn Exhibit 2. This is the 18:36:16
6 statute. 18:36:16
7 If you look at Subsection 18:36:19
8 (a)(4)(A), the statute defines as an assault weapon a 18:36:27
9 semiautomatic pistol that does not have a fixed 18:36:31
10 magazine but has a threaded barrel capable of 18:36:34
11 accepting a flash suppressor, forward hand grip or 18:36:38
12 silencer, right? 18:36:40
13 A. Yes. 18:36:43
14 Q. And you state that your testimony 18:36:45
15 concerning pistol grips, vertical foregrips and flash 18:36:51
16 suppressors, with respect to pistols, is going to be 18:36:55
17 the same as the testimony you provided for rifles, is 18:36:59
18 that right? 18:37:00
19 A. Largely, with one exception. Which is 18:37:02
20 that a threaded barrel capable of accepting a flash 18:37:08
21 suppressor or a silencer -- I don't know how it would 18:37:12
22 accept a forward hand grip, I haven't seen that used 18:37:15
23 for that purpose of a threaded barrel. But -- but if 18:37:19
24 it's capable of accepting a flash suppressor or 18:37:22
25 silencer, it's also capable of accepting a 18:37:26

1 compensator, meaning something that reduces recoil or 18:37:31
2 prevents muzzle rise. Those are very common on 18:37:34
3 pistols, and it's very common for them to be on 18:37:39
4 threaded barrels. 18:37:40
5 Q. Is it possible to have a compensator on a 18:37:44
6 pistol without a threaded barrel? 18:37:46
7 A. It is. 18:37:46
8 Q. In what cases would that be possible? 18:37:50
9 A. Sometimes on semiautomatic pistols you 18:37:53
10 have slots cut in the barrel itself, machine -- 18:38:00
11 machine cut, laser cut, whatever, and in the slide. 18:38:04
12 But more commonly, you would have threads on the 18:38:08
13 barrel that would allow a -- a compensator. 18:38:09
14 And the threads allow you to try 18:38:12
15 different compensators and to switch from one to 18:38:15
16 another, and to use it where it's appropriate and 18:38:18
17 take it off when it's not appropriate, and you put on 18:38:21
18 a cap over those threads then. 18:38:26
19 Q. Okay. So returning back to the slots 18:38:31
20 option that you provided -- that you were talking 18:38:33
21 about, can you describe that again for me? 18:38:37
22 A. There are pistols that are made with 18:38:40
23 compensating slots cut in the front end of the barrel 18:38:47
24 and in the top of the slide or sides of the slide, so 18:38:51
25 that the gases come out of the barrel and out of the 18:38:54

1 slide as well. 18:38:55

2 Q. I understand. Okay. Thank you for that 18:38:57

3 clarification. 18:39:07

4 (Off the record discussion.) 18:39:07

5 THE VIDEOGRAPHER: The time is now 18:39:16

6 approximately 6:40 p.m. We are now going off the 18:39:20

7 record. 18:39:20

8 (Brief recess was taken.) 18:39:21

9 THE VIDEOGRAPHER: The time is now 18:56:46

10 approximately 6:58. We are now going back on the 18:56:50

11 record. 18:56:52

12 BY MR. ECHEVERRIA: 18:56:53

13 Q. Mr. Kapelsohn, are you a ballistics 18:56:55

14 expert? 18:56:58

15 A. Many people consider me that. Many 18:57:00

16 Courts have allowed me to provide expert testimony in 18:57:04

17 ballistics issues. It depends on what -- what areas 18:57:06

18 of ballistics. I think I'm an expert in some others 18:57:10

19 and not others. 18:57:11

20 Q. Which areas of ballistics would you say 18:57:13

21 you are an expert in? 18:57:16

22 A. I'm a -- an expert, generally, on things 18:57:18

23 like trajectories and penetration of bullets through 18:57:24

24 substances, ricocheting of bullets, wound ballistics. 18:57:26

25 In other words, what kind of damage to people's 18:57:30

1 bodies do different kinds of bullets cause. I do 18:57:34
2 certain kinds of proximity testing. How close was 18:57:38
3 the muzzle to the thing that the bullet hit. 18:57:41
4 I don't do microscopic matching of 18:57:45
5 this bullet to the rifling of this barrel, so as to 18:57:49
6 be able to say this bullet came from that barrel. I 18:57:51
7 usually rely on the state crime lab or wherever the 18:57:55
8 gun was sent to do that. And the same with ejected 18:57:58
9 shell casings. So it -- it depends. 18:58:01
10 Q. Okay. So when you provide -- when you 18:58:04
11 provided testimony about the penetrative capabilities 18:58:09
12 of .223 and .556 rounds, were you testifying -- were 18:58:12
13 you providing testimony based on your expertise -- 18:58:15
14 A. Yes. 18:58:16
15 Q. -- as a -- as ballistics expert? 18:58:19
16 A. Yes. 18:58:21
17 Q. Okay. In your view, does the California 18:58:26
18 Assault Weapons Control Act ban weapons? 18:58:32
19 A. Bans weapon was certain features. It 18:58:35
20 doesn't ban all weapons. 18:58:38
21 Q. Could the Assault Weapons Control Act be 18:58:41
22 characterized as a prohibition on certain 18:58:45
23 configurations of rifles, pistols and shotguns? 18:58:49
24 MR. LEE: Objection. Calls for a 18:58:51
25 legal opinion and you can answer. 18:58:56

1 A. How did the question start? Could it be 18:58:59
2 characterized as? Was that how it was started? I -- 18:59:04
3 I forget the question. 18:59:05
4 MR. ECHEVERRIA: Suzanne, could 18:59:06
5 you -- 18:59:06
6 (The reporter read the referred-to 18:59:06
7 portion of the record.) 18:59:06
8 A. It could be characterized as that, and, 18:59:39
9 also, a prohibition on certain magazine sizes and 18:59:43
10 things like that. 18:59:47
11 Q. Is it your view that the Assault Weapons 18:59:49
12 Control Act prohibits certain magazine sizes? 18:59:52
13 A. Well, I'm going to have to take a look at 19:00:02
14 the exact wording. Give me a second. 19:00:07
15 Q. Okay. 19:00:26
16 A. I guess would I say it does. It says -- 19:00:36
17 there are two sections where it seems to classify as 19:00:42
18 a prohibited assault weapon. Rifles and pistols with 19:00:47
19 fixed magazines that have the capacity to accept more 19:00:50
20 than ten rounds. 19:00:51
21 So I guess that is prohibiting 19:00:53
22 magazines capacities of greater than ten rounds on 19:00:57
23 those kinds of weapons. That is one example. 19:01:00
24 Q. And that would -- and that would be for 19:01:02
25 fixed magazines, right? 19:01:04

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1 A. Those two that I cited, yes. 19:01:07

2 Q. And in your experience, do semiautomatic 19:01:12

3 weapons generally have fixed magazines? 19:01:19

4 A. Most of them do not. But my 19:01:23

5 understanding is, for instance, is that some of your 19:01:25

6 featureless AR-15s in California have magazines where 19:01:30

7 you have to separate the upper and lower receiver, 19:01:33

8 or, you know, use some other tool or method to remove 19:01:39

9 the magazine because otherwise they would be 19:01:42

10 prohibited. 19:01:43

11 That is my -- my understanding, 19:01:44

12 without looking at it more closely right now. 19:01:47

13 Q. Okay. But based on your understanding of 19:01:49

14 Section 30515, which we have been discussing as 19:01:53

15 Kapelsohn Exhibit 2, this particular statute does not 19:01:57

16 set any capacity for detachable magazines, right? 19:02:02

17 A. I think that is correct, yes. 19:02:05

18 Q. Okay. So just to -- just to summarize 19:02:08

19 this deposition as we bring it to a close, it is your 19:02:12

20 opinion that -- I -- I guess, it's not each of, but 19:02:17

21 most of the features listed in Kapelsohn Exhibit 2 19:02:21

22 have a self-defense utility for individuals who are 19:02:25

23 using a firearm in the normal course of their use, is 19:02:29

24 that a fair characterization? 19:02:31

25 A. Yes. And also have utility for the ease 19:02:38

1 of training with the weapon, firing the weapon to 19:02:42
2 develop competence and safety with the weapon. 19:02:47
3 It's -- it's used for many purposes other than just 19:02:49
4 self-defense use. But, yes, what you've said is -- 19:02:54
5 is certainly true. 19:03:01
6 Q. Could the same benefits for self-defense 19:03:03
7 that a shooter obtains from these features also 19:03:09
8 benefit a criminal who intends to misuse a weapon in 19:03:13
9 a mass shooting, for instance? 19:03:15
10 A. Anything is possible. 19:03:22
11 MR. ECHEVERRIA: With that, I have 19:03:23
12 no further questions. 19:03:26
13 MR. LEE: Thank you. 19:03:28
14 * * * 19:03:28
15 CROSS-EXAMINATION 19:03:28
16 BY MR. LEE: 19:03:28
17 Q. Mr. Kapelsohn, I want to ask you a 19:03:31
18 follow-up on some of the questioning and examination 19:03:33
19 that Mr. Echeverria undertook today. 19:03:38
20 And in -- in particular, let's 19:03:40
21 start with your testimony that Mr. Echeverria asked 19:03:43
22 you regarding the straight-line design of the AR-15 19:03:46
23 rifle. 19:03:48
24 And you mentioned earlier today 19:03:50
25 that you could provide a physical example of what you 19:03:54

1 mean by the straight-line design, is that correct? 19:03:57

2 A. Yes, sir. 19:03:59

3 Q. Are you -- so the first rule of gun 19:04:01

4 safety, of course, is to -- is that the muzzle must 19:04:04

5 always be pointed in a safe direction. 19:04:08

6 Would you be able to produce that 19:04:10

7 example AR-15, as long as you can maintain the four 19:04:15

8 rules of gun safety, today? 19:04:18

9 A. Yes. And not only will the muzzle not be 19:04:21

10 pointed at anyone, and certainly not at you folks in 19:04:24

11 California, but not anyone here either. But I have 19:04:28

12 four shoulder weapons here, two rifles and two 19:04:33

13 shotguns. And they have all been rendered incapable 19:04:35

14 of being fired. 19:04:38

15 And I've shown both the court 19:04:40

16 reporter and the videographer that. And -- and they 19:04:43

17 watched how it was done at the beginning, before we 19:04:46

18 started. 19:04:47

19 So these are all basically inert 19:04:50

20 demonstrator models. The same as I would use in a 19:04:55

21 courtroom. But yes, I could certainly do what you 19:04:57

22 have said. 19:04:58

23 Q. Thank you. I appreciate that. 19:05:00

24 I want to just really follow up on 19:05:01

25 the area of the straight-line design on the AR-15 19:05:05

1	that you testified to in Mr. Echeverria's	19:05:08
2	examination.	19:05:09
3	Could you take that example of the	19:05:11
4	AR-15 and -- and then just describe for the record	19:05:14
5	what it is?	19:05:14
6	A. Yes. The only problem I have is that I	19:05:18
7	need to get them from the countertop over there, and	19:05:20
8	I -- I think that means I have got to take off my	19:05:23
9	microphone and put it back on, when I get back over	19:05:26
10	here, is that right?	19:05:28
11	All right. So give me just a	19:05:28
12	moment, and I will be ready to demonstrate.	19:05:40
13	Now, are -- are you able to get me	19:06:18
14	in the video, and I am going to hold up the rifle?	19:06:21
15	He says he is. And you gentlemen, I take it, are --	19:06:24
16	are able to see me right now?	19:06:27
17	MR. LEE: We're able to see part of	19:06:28
18	you, but if you maybe take a -- one step back, I	19:06:32
19	think we will be able to see it better. There you	19:06:33
20	go.	19:06:34
21	A. Okay. So this is an AR-15. And it's a	19:06:38
22	very standard one. This particular one has a fixed	19:06:42
23	stock, and what I have done is I have rubber-banded a	19:06:46
24	yellow Fiberglass surveying rod along the length of	19:06:52
25	it.	19:06:52

1 So you can see that that rod goes 19:06:55
2 along the -- parallel to the barrel, through the 19:06:59
3 action, and through the stock of the gun. So this is 19:07:02
4 an example of what a straight-line design means. 19:07:06
5 Because for every action, there is 19:07:08
6 an equal and opposite reaction, when the bullet goes 19:07:12
7 out the bore, the axis of recoil is directly back 19:07:15
8 from the bore right along -- 19:07:18
9 Q. Well, I -- I don't want to interrupt your 19:07:20
10 testimony, but your fore -- your left hand is 19:07:24
11 blocking the view of what -- what you're 19:07:28
12 demonstrating, I think. So if it's possible to lower 19:07:33
13 your arm, that might help. 19:07:35
14 A. Is it better right now? 19:07:37
15 Q. Okay. Yes. That's fine. 19:07:39
16 A. Okay. So for the action of the bullet 19:07:42
17 going out the barrel, the axis of recoil is directly 19:07:46
18 opposite the axis of the bore. So it comes straight 19:07:50
19 back, basically coaxial with this yellow rod and 19:07:56
20 right into my shoulder because the stock of the AR-15 19:07:59
21 is directly opposite the barrel. 19:08:03
22 That's why AR-15s have to have a 19:08:06
23 high line of sight. So when you put your cheek on 19:08:10
24 the stock, your eye, which is maybe six, seven inches 19:08:14
25 higher, can be looking through the sights, whether 19:08:18

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1 those are iron sights like this, or an optical sight 19:08:21
2 like that. That's an example of a straight-line 19:08:26
3 design. 19:08:27
4 And what I would like to show you 19:08:28
5 now is the -- the opposite of that. 19:08:32
6 Q. Okay. So the record will reflect then 19:08:34
7 that you're putting that AR-15 firearm down and 19:08:38
8 picking up another -- a different firearm. 19:08:41
9 If you could describe -- 19:08:43
10 A. This is -- 19:08:43
11 Q. -- for the record -- just for the record, 19:08:44
12 what that firearm is? 19:08:45
13 A. This is the Ruger Mini-14 that we have 19:08:48
14 been talking about. And this particular one has the 19:08:51
15 conventional wooden stock, like many Ruger Mini-14s 19:08:55
16 do. It doesn't have a folding or a telescoping 19:08:59
17 stock, but a conventional wooden one. 19:09:02
18 I have got the yellow rod 19:09:04
19 rubber-banded along the axis of the bore. You see 19:09:08
20 that the stock drops down from the axis of the bore. 19:09:10
21 That's a traditional sporting weapon design. 19:09:15
22 But what that means is that the 19:09:17
23 axis of the -- of recoil is here, and the support is 19:09:21
24 lower. And so that tends to produce muzzle rise, as 19:09:25
25 a matter of physics. And -- and that's why a 19:09:29

1 straight-line design controls recoil better than a 19:09:33
2 traditional sporting rifle design, where the stock 19:09:36
3 and the support is lower than the axis of recoil. I 19:09:42
4 would stop there, if that's okay. 19:09:45

5 Q. That's fine. 19:09:46

6 What I would like you to do is pick 19:09:48
7 up the first firearm, the AR-15, again, in your 19:09:54
8 demonstration of the straight-line design. And if 19:09:57
9 you could demonstrate for the video and the record 19:10:01
10 how one would typically shoulder the AR-15? 19:10:07

11 A. I am going to turn the other way. You 19:10:12
12 won't see the yellow rod. 19:10:14

13 Q. That's fine. 19:10:15

14 A. But the typical way one would shoulder it 19:10:18
15 is like this. So the buttstock would actually be 19:10:22
16 fairly high on the shoulder. For most people, only 19:10:25
17 the toe of the stock that I'm touching here, that's 19:10:28
18 called the toe of the stock, that's the heel of the 19:10:30
19 stock. 19:10:31

20 Only the toe of the stock touches 19:10:33
21 most people's shoulders, and that's sufficient 19:10:36
22 because this is a rifle with very little recoil. We 19:10:40
23 pointed that out as one of the advantages of the 19:10:43
24 AR-15 for most shooters. It's an easy rifle to shoot 19:10:47
25 and a pleasant rifle to shoot and an accurate rifle 19:10:49

1 to shoot because it has very little recoil. 19:10:52

2 Q. And the record will reflect that the 19:10:54

3 witness has brought the buttstock of the firearm up 19:10:57

4 to his right shoulder, and is grasping the pistol 19:11:01

5 grip with his right hand and supporting with the -- 19:11:06

6 the fore-end of the rifle with his support hand or 19:11:08

7 his left hand. 19:11:10

8 Is that the traditional -- is that 19:11:13

9 a traditional -- is that a typical way that a shooter 19:11:14

10 would -- would learn -- shoulder and fire an AR-15 19:11:18

11 rifle? 19:11:19

12 A. It's -- it's the standard way to hold it 19:11:21

13 and fire it, yes. 19:11:22

14 Q. Okay. What does the concept of cheek 19:11:25

15 weld mean? 19:11:28

16 A. Cheek weld is one's cheek touching the 19:11:30

17 stock of the rifle. And I -- I have got that -- that 19:11:35

18 yellow rod rubber-banded here, so that's a little 19:11:38

19 hard. But basically, we try to teach shooters to 19:11:41

20 develop a consistent cheek weld because that 19:11:45

21 positions their eye uniformly behind the sights 19:11:49

22 automatically. It allows them to raise the rifle and 19:11:54

23 fire it accurately. 19:11:55

24 Whereas, if their cheek was just 19:11:56

25 floating around, a different way each time, their eye 19:12:00

1 would be looking through the sights a different way 19:12:01
2 each time, and it would not be a good -- it would not 19:12:05
3 be conducive to good marksmanship. 19:12:08
4 Q. How important is the concept of cheek 19:12:11
5 weld to -- to -- to marksmanship? 19:12:13
6 A. It's extremely important. Every branch 19:12:15
7 of our military teaches it. All target shooters are 19:12:19
8 taught it. People who are taught to shoot a rifle 19:12:23
9 properly are taught it. 19:12:24
10 Q. Which of the two rifles is better, in 19:12:26
11 terms of the concept -- developing the concept of 19:12:30
12 cheek weld, the straight-line AR-15 rifle that you -- 19:12:33
13 that you are holding up, or the -- the Mini-14 that 19:12:34
14 you were also demonstrating with? 19:12:37
15 A. I -- I think they are both good. They 19:12:39
16 just require a different cheek weld. 19:12:42
17 Q. Okay. 19:12:42
18 A. I wouldn't say that one is better than 19:12:44
19 the other in that regard. Now, I also have two 19:12:48
20 shotguns here, so that I could demonstrate a 19:12:51
21 telescoping buttstock, which is something that I 19:12:54
22 talked about at the hearing but -- and in my 19:12:57
23 declaration, but I'd like to be able to demonstrate 19:13:00
24 it, if possible. 19:13:01
25 Q. Before I get there, I want to follow up 19:13:04

1 on the straight-line design that was testimony that 19:13:06
2 you testified to in the cross-examination. 19:13:09
3 So when you were grasping the AR-15 19:13:15
4 with your -- your ordinary typical stance and -- and 19:13:22
5 holding it up to your shoulder, if you were to have a 19:13:26
6 featureless AR -- style AR-15, in which you didn't 19:13:30
7 have a pistol grip with a pronounced grip that 19:13:37
8 protrudes conspicuously below the action, how would 19:13:40
9 that impede, if -- if at all, the -- or interfere 19:13:45
10 with the straight-line design that we've talked -- 19:13:48
11 that you're talking about? 19:13:49
12 A. It -- it makes it more awkward. If -- if 19:13:52
13 I can show you by picking up the Mini-14 again, may I 19:13:57
14 do that? 19:13:57
15 Q. Yes. 19:13:59
16 A. Okay. I'm going to pick up the Mini-14 19:14:01
17 and I am going to take the yellow rod off it. 19:14:10
18 When Mr. Echeverria asked me, 19:14:15
19 during his questioning, about pistol grips, I said 19:14:19
20 usually that term refers to the kind of pistol grip 19:14:22
21 that the AR-15 has on it. But I said it can also 19:14:28
22 refer to part of the stock of a traditionally stocked 19:14:32
23 rifle. 19:14:33
24 So this part of the rifle here, 19:14:34
25 that I'm pointing to on this Mini-14, that is called 19:14:38

1 the pistol grip. There are some rifles that have a 19:14:41
2 straight stock that have no curve here for the hand. 19:14:45
3 The hand can fit on this relatively 19:14:47
4 comfortably because it's not a straight-line design 19:14:52
5 because this is dropped down, I don't know, five 19:14:56
6 inches below the axis of the bore on this Mini-14. 19:15:01
7 So the hand goes there naturally 19:15:04
8 and we can aim the rifle relatively naturally. But 19:15:08
9 when we have a straight-line design where everything 19:15:11
10 comes straight back to the shoulder, and now we have 19:15:14
11 got to get our hand in -- just the -- the featureless 19:15:18
12 rifles and their grips for the strong hand, for the 19:15:23
13 right hand of a right-handed shooter, are just 19:15:26
14 awkward. They look awkward in appearance. I can 19:15:30
15 watch Mr. Kraut shooting them, and I can see that 19:15:33
16 it's awkward. Can one learn to use it? Yes. But 19:15:36
17 it's an uphill struggle. 19:15:39
18 The reason that the AR-15 has been 19:15:41
19 so popular, both with civilians and with law 19:15:45
20 enforcement and with military, is that it's 19:15:50
21 ergonomically designed to fit the hand and fit the 19:15:52
22 body the way the rifle is normally used. 19:15:55
23 So to take the straight-line design 19:15:57
24 of an AR-15 and put on it a stock that doesn't have a 19:16:02
25 pistol grip, is to force an awkward design on 19:16:06

1 something, which was a good design to start with. It 19:16:08
2 makes it harder to learn to use. People won't shoot 19:16:11
3 it as well. They won't handle it as safely. They 19:16:15
4 wouldn't shoot it as accurately, which means they 19:16:17
5 wouldn't shoot it as safely because they may not hit 19:16:21
6 what they're shooting at. 19:16:23

7 Q. Thank you. 19:16:24

8 I want to follow up on 19:16:28
9 Mr. Echeverria's questioning regarding the pistol 19:16:30
10 grip of the AR-15. 19:16:34

11 What are the -- are you familiar 19:16:36
12 with the standard steps that are required to clear a 19:16:41
13 malfunction in an AR-15 rifle? 19:16:44

14 A. Yes. There are -- there are different 19:16:45
15 methods used in different places, but it's -- I'm not 19:16:48
16 just familiar with it. I've taught it to hundreds 19:16:50
17 and hundreds of law enforcement officers and 19:16:53
18 instructors, yes. 19:16:55

19 Q. What would the typical sequence be for -- 19:16:57
20 for clearing a malfunction in an AR-15 rifle? 19:17:01

21 A. The way I teach it, and -- and -- and 19:17:03
22 many others teach it, what's called a phase one 19:17:08
23 clearance procedure would be tap, rack, ready. 19:17:13

24 So you would first tap the bottom 19:17:15
25 of the magazine with your support hand. And then you 19:17:18

1 rack the action, meaning pull back on the charging 19:17:21
2 handle and let it go forward. That would seat an 19:17:25
3 unseated magazine. It would allow chambering a 19:17:29
4 round, if the chamber had been empty. It would 19:17:31
5 extract and eject a -- a round which had not fired, 19:17:35
6 maybe it had a bad primer. Or it would, in many 19:17:38
7 cases, eject a stovepiped case or a cartridge case 19:17:45
8 that had not ejected cleanly. So that's tap, rack 19:17:49
9 and ready. 19:17:51

10 If that didn't work, then you go to 19:17:54
11 phase two, which is to lock the action open, meaning 19:17:58
12 lock the bolt to the rear, remove the magazine, which 19:18:01
13 often has to be done forcefully in that event. Work 19:18:05
14 the action back several times, put in a new magazine 19:18:09
15 or the same magazine. Chamber a round and then be 19:18:12
16 ready. So it's a much more complicated procedure, if 19:18:15
17 tap, rack, ready doesn't clear the stoppage 19:18:17
18 initially. 19:18:18

19 Q. So the second phase, assuming that the 19:18:20
20 first one doesn't clear the malfunction, the second 19:18:25
21 phase involves removing the magazine and/or -- I'm 19:18:30
22 sorry, pulling the -- the charging handle back and 19:18:34
23 removing the magazine with your hand, is that 19:18:36
24 correct? 19:18:37

25 A. Yes, pull -- pulling the charging handle 19:18:38

1 back and locking the bolt to the rear, and then 19:18:41
2 removing the magazine. Then working the action back 19:18:45
3 and forth several times to extract and eject whatever 19:18:48
4 kind of garbage is in the mechanism and then 19:18:51
5 reloading with a new -- with a new or the same 19:18:53
6 magazine chambering around it being ready then. 19:18:57
7 Q. Okay. So picking up, again, the AR-15 19:18:59
8 rifle, would you be able to demonstrate -- I know 19:19:04
9 there's no magazine in that. 19:19:06
10 A. I have an empty magazine, if you would 19:19:08
11 like me to use one. 19:19:10
12 Q. Sure. Yeah, if we can demonstrate that. 19:19:30
13 A. I am removing the yellow rod from the 19:19:53
14 AR-15. I am going to have to stimulate this because 19:20:03
15 the way I have made this rifle safe, to the 19:20:06
16 satisfaction of the videographer and the reporter, is 19:20:09
17 I removed the bolt from it completely. So -- so you 19:20:13
18 will get an idea of what one would do, but I can't do 19:20:16
19 it completely because it doesn't have a bolt in it. 19:20:22
20 All right. So if -- 19:20:22
21 Q. So the record will reflect that you have 19:20:24
22 inserted a demonstratively empty magazine into the 19:20:27
23 magazine well. And it -- could you describe for the 19:20:30
24 record what you are about to do? 19:20:32
25 A. I am going to do the two stoppage 19:20:34

1 clearances, phase one and phase two, that I just 19:20:38
2 described verbally to you. 19:20:40
3 Q. Very good. 19:20:40
4 A. Okay. So let's say I pull the trigger 19:20:44
5 and the rifle didn't fire when it was supposed to 19:20:46
6 fire. Tap, rack, ready looks like this. You tap the 19:20:52
7 base of the magazine with the heel of your support 19:20:54
8 hand, to make sure the magazine is seeded. You rack 19:20:59
9 the action, by pulling back on the charging handle 19:21:02
10 and letting it go forward. If there were a bolt in 19:21:06
11 it, it would fly forward. And then you should be 19:21:10
12 ready to fire. 19:21:10
13 If the -- if that didn't clear, if 19:21:12
14 the rifle still wouldn't fire, you lock the bolt to 19:21:15
15 the rear by pulling back the charging handle, pushing 19:21:17
16 down the bolt catch like that. You pull out the 19:21:21
17 magazine. You either discard it or save it. I'm 19:21:26
18 tucking it into my belt for the moment. You work the 19:21:28
19 mechanism back and forth several times. It's hard to 19:21:31
20 do with no bolt in it. But you work it back and 19:21:34
21 forth to clear whatever stoppage might be in it. 19:21:37
22 You take that magazine, or 19:21:39
23 preferably a fresh one, because the magazine may have 19:21:42
24 caused the stoppage. You insert it. Push-pull, rack 19:21:47
25 the mechanism, and you should be ready to fire then. 19:21:51

1 Q. Okay. During that part of the 19:21:54
2 demonstration that involved removing the magazine, 19:22:00
3 racking the charger handle back and then inserting a 19:22:02
4 fresh magazine, where was your dominant hand during 19:22:08
5 that -- that part of the sequence? 19:22:09
6 A. It was on the pistol grip because that's 19:22:11
7 the best way to hold this rifle. 19:22:13
8 Q. And was -- where is your thumb, while 19:22:18
9 you -- the thumb of your dominant hand, while you 19:22:20
10 were performing that? 19:22:22
11 A. Wrapped around the pistol grip. 19:22:25
12 Q. Okay. So how would that operation be 19:22:27
13 impacted or effected by a featureless grip that 19:22:33
14 didn't allow you to wrap your thumb around the pistol 19:22:37
15 grip? 19:22:38
16 A. I -- 19:22:38
17 MR. ECHEVERRIA: Objection. 19:22:39
18 Objection. Incomplete hypothetical. Calls for 19:22:42
19 speculation. 19:22:44
20 MR. LEE: You -- you may answer. 19:22:46
21 A. This pistol grip allows a good strong 19:22:50
22 grip on the rifle, and notice that even so, I'm 19:22:53
23 bringing the butt of the rifle into my armpit to 19:22:57
24 brace it between my upper arm and my rib cage because 19:23:01
25 there's a lot of weight out here. This is a -- a 19:23:04

1 heavy rifle. Excuse me, I'm getting my wristwatch 19:23:10
2 off, because it's in the way. 19:23:10
3 But this pistol grip allows me to 19:23:12
4 hold this, while I'm doing things like removing the 19:23:13
5 magazine, putting a fresh one in and tugging on it. 19:23:17
6 If this were a -- a featureless rifle without a 19:23:20
7 pistol group, with the kind of grips that the 19:23:23
8 California featureless rifles have, it's not nearly 19:23:26
9 as easy to hold this rifle up for this length of time 19:23:30
10 and do this. I'm a relatively strong person, but 19:23:33
11 there are a lot of people who just -- they wouldn't 19:23:36
12 have the strength to hold this securely. It makes it 19:23:38
13 much, much more difficult. 19:23:44
14 Q. And so from that perspective -- 19:23:45
15 MR. LEE: And the record will 19:23:46
16 reflect that while the witness was -- you may have a 19:23:49
17 seat, Mr. Kapelsohn. 19:23:51
18 THE WITNESS: Thank you. 19:23:51
19 MR. LEE: The record will reflect, 19:23:53
20 while the witness was demonstrating that -- that -- 19:23:55
21 or testifying as to that part, he was again 19:23:57
22 demonstrating -- his strong-hand thumb was wrapped 19:24:01
23 around the pistol grip, while he did that second 19:24:18
24 demonstration the entire time. 19:24:22
25 BY MR. LEE: 19:24:22

1 Q. So Mr. Kapelsohn, the question I have, 19:24:26
2 do -- is that, do you see the pistol grip as a 19:24:31
3 serving or -- put it this way, do you see the lack of 19:24:34
4 a pistol grip as impeding safety in any way? 19:24:40
5 A. Yes, it -- it gives you, at best, a much 19:24:45
6 more precarious grip on the rifle. And if -- if I 19:24:53
7 can stand up for another second and pick up the 19:24:55
8 Mini-14, I would show you something, which is, if we 19:25:00
9 take a conventional stocked rifle like this, and we 19:25:06
10 were doing those same things, pulling magazines out 19:25:08
11 and working bolts, at least, with this kind of pistol 19:25:12
12 grip on the stock, you still can wrap your fingers 19:25:16
13 around it and wrap your thumb around it and have a 19:25:19
14 good strong hold on it. it's not like a featureless 19:25:22
15 rifle. 19:25:24
16 So this is not as good as the 19:25:26
17 pistol grip for controlling the rifle, heavy rifle, 19:25:30
18 during those manipulations, but it's far better than 19:25:34
19 a featureless rifle stock. 19:25:38
20 Q. And that's -- and it's -- and it works, 19:25:39
21 at least, in the Mini-14 context because you're able 19:25:42
22 to, at least, get your thumb around the -- the stock, 19:25:48
23 and that -- that stabilizes the firearm arm, is that 19:25:51
24 correct? 19:25:51
25 A. Absolutely. 19:25:52

1 Q. Okay. All right. I think that takes 19:25:58
2 care of the questions that I had on the straight-line 19:26:01
3 design and the pistol grip. 19:26:02
4 But you did mention that -- and I 19:26:03
5 think this more follows up on the testimony that you 19:26:06
6 provided at the hearing, with regard to shotgun 19:26:10
7 stocks. 19:26:12
8 You testified at the hearing 19:26:14
9 that -- that there are some manufacturers of shotgun 19:26:17
10 stocks that help to absorb recoil. 19:26:21
11 Do you remember that testimony? 19:26:24
12 A. Yes. And also, that those same stocks, 19:26:26
13 being telescoping, suit themselves to shooters of 19:26:30
14 different statures. 19:26:32
15 Q. Right. 19:26:32
16 So did you bring an example of a 19:26:34
17 telescoping shotgun stock with you? 19:26:38
18 A. I -- I brought examples of a conventional 19:26:39
19 one and of a telescoping recoil reducing one. 19:26:44
20 Q. Let's -- just to save time here, because 19:26:46
21 I think we are all just about done -- I would like to 19:26:49
22 just take the telescoping stock shotgun and hold that 19:26:53
23 up for the -- for the video. 19:27:04
24 A. This particular shotgun happens to be a 19:27:25
25 pump-action. It is from my sheriff's department. 19:27:28

1 They loaned it to me. But it would be the same, if 19:27:31
2 it were a semiautomatic shotgun regulated by the 19:27:35
3 California Assault Weapons Law. 19:27:36

4 And very much like an AR-15 with a 19:27:41
5 telescoping buttstock, this has a telescoping 19:27:45
6 buttstock. That's its furthest extended position. 19:27:50
7 That's its furthest imposition. And it has several 19:27:56
8 intermediate positions. 19:27:59

9 So, for instance, I am 5'11", 5'11" 19:28:05
10 and a half. I would use this fully extended like 19:28:09
11 this, wearing these clothes. And that would fit me 19:28:14
12 properly. If I were wearing heavy clothes in the 19:28:16
13 wintertime, or a -- a raid vest for the sheriff's 19:28:20
14 department, I would put it in a little bit because 19:28:23
15 I'd have more clothing here. And putting in would 19:28:27
16 allow me to hold the gun properly. 19:28:29

17 With it fully out, which is the 19:28:31
18 length of a conventional shotgun stock, this gun is 19:28:36
19 too long for my wife to use well. It's too heavy out 19:28:40
20 toward the muzzle. It's too far a reach, to the 19:28:44
21 fore-end. 19:28:45

22 In our sheriff's department, we 19:28:46
23 have people ranging from about five feet tall to 19:28:50
24 about 6'6". The same buttstock isn't going to fit 19:28:54
25 all of them. My wife takes this same shotgun, 19:28:58

1 because she's tried it, and puts the stock in at the 19:29:00
2 shortest position. And that lets her have the weight 19:29:03
3 closer to being over her body rather than 19:29:06
4 cantilevered way out here, where it is tiring and 19:29:09
5 difficult to operate. 19:29:11

6 Now, this same shotgun has in it, 19:29:15
7 in the stock, in this portion of the stock right 19:29:19
8 here, something like a shock absorber. If I press -- 19:29:26
9 I don't know if you can see it, but this part is 19:29:28
10 going in and out. That is absorbing some of the 19:29:31
11 recoil of the shotgun. 19:29:33

12 A shotgun, a 12 gauge shotgun, with 19:29:36
13 full powered buck shot or rifled slugs, has 25 to 30 19:29:41
14 foot pounds of full recoil going into your shoulder. 19:29:44
15 That's a lot of recoil. The average handgun, a 9 19:29:47
16 millimeter, a .40 Caliber handgun, has five or six 19:29:51
17 foot pounds. So this shotgun has five times that 19:29:54
18 much, free recoil. 19:29:56

19 This recoil pad absorbs some of it. 19:29:59
20 That shock absorber feature absorbs some it. And 19:30:05
21 this telescoping stock allows the shotgun to be 19:30:09
22 suited to users of different statures with different 19:30:12
23 arm lengths. 19:30:13

24 You notice, even when it's all the 19:30:16
25 way in, this is still an extremely long weapon. This 19:30:18

1 is not something you could stick in your waistband 19:30:21
2 and go rob a liquor store with, or easily conceal. 19:30:25
3 It's -- it's a lengthy shoulder weapon. And this has 19:30:28
4 a shorter barrel as is normally legal on a shotgun. 19:30:33
5 So this doesn't make this a weapon of crime. It make 19:30:35
6 it a weapon that is suited for shooters of different 19:30:40
7 statures. 19:30:40
8 Q. Okay. Thank you. 19:30:41
9 MR. LEE: For the record, what -- 19:30:43
10 what model of shotgun is that? 19:30:46
11 A. This is a Remington Model 870, which is 19:30:50
12 Remington's standard pump-action police shotgun. but 19:30:53
13 the same kind of stock is available for the Remington 19:30:58
14 11-87, which is their semiautomatic shotgun that is 19:31:03
15 used by some police departments. And the same stocks 19:31:05
16 are available for the Mossberg shotguns and for other 19:31:09
17 brands of shotguns. 19:31:10
18 Q. So just -- and I'm just mainly doing this 19:31:12
19 for the -- for the written record, you are holding up 19:31:16
20 a Remington Model 870, and it was configured with 19:31:19
21 both a pistol grip and the telescoping stock? 19:31:26
22 A. That's correct. 19:31:26
23 Q. And it's your understanding that -- now, 19:31:28
24 the -- the model that you were holding up is a 19:31:31
25 pump-action shotgun, is that right? 19:31:33

1	A.	That's correct.	19:31:33
2	Q.	But it's your understanding that if that	19:31:35
3		was a semiautomatic shotgun, having those two	19:31:37
4		features, the pistol grip and the telescoping stock,	19:31:41
5		would make it an assault weapon under California Law,	19:31:45
6		is that your understanding?	19:31:46
7	A.	That is my understanding, yes.	19:31:47
8	Q.	And when you were pointing out the recoil	19:31:50
9		dampening feature of the telescoping stock, you were	19:31:54
10		pointing to a small space right behind the	19:31:57
11		receiver --	19:31:58
12	A.	That's correct.	19:31:58
13	Q.	-- of the firearm, is that correct?	19:32:00
14	A.	That's correct.	19:32:01
15	Q.	And in that small space, it seemed to	19:32:05
16		give the receiver, and, in relation to the -- the	19:32:12
17		stock, a little bit of play, or a little bit of -- of	19:32:16
18		space to -- to move, and you were demonstrating that,	19:32:21
19		is that -- is that right?	19:32:23
20	A.	That's -- that's correct. The stocks	19:32:24
21		were first made by a company called Knox, K-N-O-X,	19:32:28
22		then bought -- bough out by Blackhawk, which now	19:32:31
23		makes the stocks for many, many models of shotguns.	19:32:36
24	Q.	Okay. Including semiautomatic shotguns?	19:32:39
25	A.	Yes -- yes, sir.	19:32:39

1 Q. And you have seen that feature on 19:32:41
2 semiautomatic shotguns before? 19:32:45
3 A. Many times. 19:32:45
4 MR. LEE: Okay. Thank you. That 19:32:47
5 is -- that is actually all the questions that I have 19:32:48
6 at this time. 19:32:53
7 MR. ECHEVERRIA: I have some 19:32:54
8 follow-up questions based on the demonstration, if I 19:32:57
9 may. 19:33:07
10 MR. LEE: Sure. 19:33:07
11 * * * 19:33:07
12 REDIRECT EXAMINATION 19:33:07
13 BY MR. ECHEVERRIA: 19:33:07
14 Q. Mr. Kapelsohn, can you please present the 19:33:09
15 AR-15 that you were using for this straight-line 19:33:12
16 design demonstration? 19:33:13
17 A. Yes, sir. 19:33:14
18 Q. Thank you. 19:33:20
19 Can -- can you show the -- the 19:33:21
20 muzzle of the rifle, please. 19:33:28
21 Thank you. Is there a flash 19:33:30
22 suppressor on that weapon? 19:33:31
23 A. Yes, there is. It's an A2 Type Birdcage 19:33:38
24 Flash Suppressor. It's like what you looked at, like 19:33:42
25 the exhibit that you showed me. 19:33:43

1 Q. Right. 19:33:46

2 And it has a fixed stock, is that 19:33:48

3 right? 19:33:49

4 A. This -- this particular rifle does, yes, 19:33:52

5 sir. 19:33:52

6 Q. Is that the particular rifle that we were 19:33:56

7 discussing earlier today? Is that the rifle that you 19:34:00

8 used for your law enforcement related duties? 19:34:04

9 A. This is not. 19:34:06

10 Q. Okay. Other than the pistol grip 19:34:10

11 protruding from the bottom of the action of the 19:34:14

12 rifle, and the flash suppressor on the muzzle, are 19:34:19

13 there any other features that would qualify that 19:34:22

14 weapon as an assault weapon under California law? 19:34:27

15 A. Not that I can think of. Let me take a 19:34:33

16 quick look. 19:34:34

17 Q. Let me -- 19:34:34

18 A. No. No. 19:34:42

19 Q. Okay. Thank you. 19:34:43

20 So going back to -- let's assume 19:34:43

21 that that rifle, instead of having a pistol grip 19:34:45

22 protruding beneath the action, let's assume that it's 19:34:49

23 a California compliant rifle and it has a different 19:34:52

24 type of grip. 19:34:54

25 A. Okay. 19:34:57

1 Q. How would a different grip inhibit what 19:34:59
2 you were referring to as cheek meld? 19:35:02
3 A. Cheek weld, W, with a W, like -- like, 19:35:06
4 welding something. 19:35:07
5 Q. Yes. Yes. You don't want to meld your 19:35:14
6 cheek to the rifle. 19:35:15
7 A. Right. It -- it depends on what -- there 19:35:16
8 are many different featureless buttstocks, as I take 19:35:23
9 it, from looking at the few things that I looked at. 19:35:27
10 So whether they harm cheek weld or not, I don't know. 19:35:31
11 But they would certainly harm your grip on the gun. 19:35:35
12 Q. Okay. I am going to mark as an 19:35:37
13 additional exhibit, just to help our discussion and 19:35:40
14 to move it along. 19:35:41
15 This is going to be Kapelsohn 19:35:44
16 Exhibit No. 5, I believe. We may have to cleanup the 19:35:56
17 numbering later, but I will mark this as Kapelsohn 19:35:59
18 Exhibit 5. 19:36:12
19 MR. LEE: Can the witness sit down? 19:36:14
20 MR. ECHEVERRIA: Oh, yes, sorry, 19:36:15
21 Mr. Kapelsohn, you don't need to stand for -- for the 19:36:15
22 rest of the examination. 19:36:15
23 I am going to share my screen with 19:36:17
24 you -- with you all. 19:36:18
25 (Kapelsohn Exhibit Number 5 was 19:36:18

1 marked for identification.) 19:36:18

2 BY MR. ECHEVERRIA: 19:36:18

3 Q. Can you see this document, sir? 19:36:24

4 A. I can. 19:36:26

5 Q. And I'm going to zoom out a little bit, 19:36:28

6 so you can see the website that I printed this from. 19:36:32

7 It was a website called pewpewtactical.com. I make 19:36:40

8 no representations about what this website is. But 19:36:43

9 it does have images of AR-15 rifles with California 19:36:50

10 compliant grips. 19:36:52

11 Do you see the images on the first 19:36:57

12 page on Kapelsohn Exhibit 5? 19:36:58

13 A. Yes, but I can only see the -- the grips 19:37:01

14 on two of the four rifles shown. 19:37:03

15 Q. Right. I'm going to turn to a different 19:37:11

16 page. 19:37:16

17 So these are some examples of grips 19:37:19

18 that this website states are California compliant. 19:37:23

19 Do you see this image of the pistol 19:37:26

20 grip? 19:37:27

21 A. I do. 19:37:28

22 Q. So in this case, the thumb would not be 19:37:31

23 able to wrap directly around the grip, right? 19:37:35

24 A. Correct. 19:37:38

25 Q. How would this particular grip, in your 19:37:40

1 view, inhibit -- inhibit cheek weld? 19:37:45

2 A. This particular grip doesn't have to do 19:37:47

3 with cheek weld. It inhibits a proper grip on the 19:37:56

4 rifle. 19:37:56

5 Q. Okay. But this particular type of grip 19:38:04

6 would not inhibit cheek weld, correct? 19:38:08

7 A. I -- I don't think so. I -- I would need 19:38:09

8 to try it to be sure, but I don't think so. 19:38:11

9 Q. Okay. Would this type of grip also allow 19:38:17

10 an individual to engage in the multi-step malfunction 19:38:22

11 clearing procedures that you were referring to? 19:38:33

12 A. With more difficulty. The design of this 19:38:38

13 grip is such that the thumb, the shooter's thumb 19:38:42

14 cannot wrap around the back of the grip and form a -- 19:38:48

15 a proper grip. 19:38:50

16 If -- if one were falling off the 19:38:54

17 roof of a building and could grab on to the rung of a 19:38:57

18 ladder to stop himself, you would grab on with your 19:39:00

19 hands wrapped around, fingers and thumbs. You 19:39:05

20 wouldn't grab just with a cupped hand. It's not 19:39:08

21 nearly as strong a grip. You can't control the rifle 19:39:13

22 nearly well -- as well, with this kind of a grip. 19:39:18

23 Q. Now, correct me if I'm wrong, but during 19:39:19

24 the -- the demonstration, you did move the rifle away 19:39:23

25 from your cheek? 19:39:26

1 A. Yes. 19:39:27

2 Q. To clear the malfunction, is that right? 19:39:29

3 A. That's correct. 19:39:33

4 Q. So if an individual were trying to clear 19:39:34

5 a malfunction from this type of rifle -- and I 19:39:37

6 understand you can't see the full rifle, but could an 19:39:40

7 individual slide their thumb through the space 19:39:44

8 between the stock and the finned pistol grip, 19:39:48

9 allowing the individual to gain the kind of grip that 19:39:52

10 you were referring to as being helpful when trying to 19:39:54

11 clear a malfunction? 19:39:56

12 A. I -- I'd need to try this, to be able to 19:39:59

13 tell you specifically how bad it is. But that's 19:40:03

14 something I would never suggest someone do. And it 19:40:06

15 looks awkward and dangerous. 19:40:12

16 Q. Okay. Okay. But you did testify that 19:40:13

17 you have never fired a California compliant AR-15, 19:40:16

18 right? 19:40:18

19 A. That's -- I believe I have not. And I 19:40:19

20 certainly haven't used this grip. That's why I say 19:40:22

21 I'd need to try it. But it's awful. I can tell you 19:40:25

22 that from looking at it. I don't have to try it 19:40:27

23 to -- I'd have -- I'd have to try it to tell you just 19:40:29

24 how awful it is, but I can look at it and tell you 19:40:32

25 it's awkward and it's unsafe to try to do that. 19:40:36

1 People have different sized thumbs. 19:40:38
2 People wear gloves on, in cold weather and in -- in 19:40:41
3 other circumstance. And to take and put your thumb 19:40:44
4 in this little space between the top fin of this grip 19:40:49
5 and the bottom of the receiver is something I would 19:40:51
6 never have a shooter do. 19:40:57
7 Q. Okay. So maybe you wouldn't recommend 19:40:59
8 this particular kind of pistol grip. Let's take a 19:41:02
9 look at some other versions. 19:41:02
10 There is an image of -- of a 19:41:05
11 shooter in a firing position, right? This is on 19:41:07
12 page -- I can't tell what page. I can't tell what 19:41:09
13 page. 19:41:09
14 A. Well, it doesn't exactly look like a 19:41:10
15 firing position because he has got the gun down. 19:41:13
16 It's not up at his shoulder -- you know, if that's -- 19:41:16
17 if that's his left arm coming in from above, then I'm 19:41:18
18 not sure this is a firing position. But it -- it 19:41:22
19 shows -- it shows that the grip is awkward. 19:41:28
20 Q. Okay. I'm -- I'm sorry. I'm not 19:41:28
21 referring to the entire holding of the rifle, but in 19:41:31
22 terms of the position of the hand and fingers, you 19:41:33
23 would agree that this -- this is what his shooting 19:41:35
24 hand would look like, if he were in a firing 19:41:38
25 position? 19:41:39

1 A. Possibly. It's -- it's hard to tell from 19:41:41
2 this picture. 19:41:41
3 Q. And you stated that the AR-15 has minimum 19:41:50
4 recoil because of the straight-line design, yes? 19:41:52
5 A. Yes. And because of its cartridge. 19:41:54
6 And -- and because of its cartridge. 19:41:56
7 Q. And because of the cartridge. 19:41:59
8 And that would be the -- the .223 19:42:02
9 or .556 NATO cartridges that the AR-15 accommodates, 19:42:07
10 right? 19:42:08
11 A. Correct. 19:42:12
12 Q. Okay. So the fact that a -- an AR-15 may 19:42:14
13 have a finned pistol grip, like you can see in 19:42:17
14 Kapelsohn Exhibit 5, would this increase the recoil 19:42:20
15 of the weapon, in your view? 19:42:24
16 A. It probably would, actually, because you 19:42:25
17 don't have the web of your hand behind the pistol 19:42:28
18 grip to support against any of the recoil. You have 19:42:33
19 your hand along the side of this grip, whatever we 19:42:37
20 call it. Yes, it would increase it. 19:42:43
21 Q. And -- and just for the record, because I 19:42:44
22 don't think you -- I don't think you described it for 19:42:46
23 the record, it's -- you're looking at a page and a 19:42:50
24 picture that is captioned Strike MegaFin, Close? 19:42:55
25 A. Yes, and I have to -- I have to add 19:42:56

1 something to my answer or correct it, really. 19:42:59

2 When you asked, would it increase 19:43:02

3 the recoil of the rifle. The -- I'll call it, for 19:43:06

4 our purposes right now, the free recoil or the 19:43:10

5 inherent recoil of the rifle would remain the same. 19:43:15

6 It's -- it's a factor that is determined by the force 19:43:20

7 with which the bullet is going out in the opposite 19:43:23

8 direction and coming back the -- the weight of the 19:43:26

9 rifle. 19:43:27

10 But I take it you mean the -- the 19:43:29

11 practical effect, the felt recoil, or the practical 19:43:33

12 effect of the recoil. In other words, how much it 19:43:35

13 recoils into the shooters shoulder. How much the -- 19:43:38

14 the gun moves rearward and so forth. All of those 19:43:41

15 things are going to be increased by a poor grip like 19:43:44

16 this. And this is a poor grip. 19:43:48

17 Q. But the inherit recoil of the weapon 19:43:57

18 would not be affected by the type of grip? 19:44:01

19 A. No, the effect of the recoil would -- 19:44:03

20 Q. Right. 19:44:03

21 A. -- would be increased. 19:44:04

22 Q. Thank you. 19:44:10

23 So let's move onwards in Kapelsohn 19:44:12

24 Exhibit 5. Here's another image of a grip that does 19:44:16

25 not protrude conspicuously beneath the action of the 19:44:20

1 weapon. Here the grip is beneath the stock. 19:44:23

2 Would you agree with that? 19:44:27

3 A. Yes. 19:44:28

4 Q. Okay. In this case, a shooter's thumb 19:44:31

5 would be able to wrap around the grip, right? 19:44:35

6 A. Yes. 19:44:37

7 Q. And in -- if an individual is trying to 19:44:39

8 perform the malfunction steps that you demonstrated 19:44:43

9 earlier, this type of pistol may be better for them. 19:44:48

10 Would you agree with that? 19:44:50

11 A. Better than the last one we just looked 19:44:52

12 at. Not nearly as good as a pistol grip. 19:44:55

13 Q. Well, my question was about comparing to 19:44:57

14 the last one we were looking at. 19:44:59

15 You would agree that this one would 19:45:01

16 be better? 19:45:01

17 A. Could be. I would have to try it. But 19:45:03

18 I -- it could be, but not nearly as good as what 19:45:05

19 should be. 19:45:12

20 Q. And you testified that it should -- that 19:45:13

21 a pistol grip should be a particular way just because 19:45:17

22 it is that way in many cases, right? 19:45:20

23 A. No, not because it is that way. Because 19:45:23

24 it's designed ergonomically with the structures of 19:45:28

25 the human body in mind, and it's been testing since 19:45:31

1 the mid 1960s. And it's been, to some extent, 19:45:36
2 refined since then. It's been used by literally 19:45:40
3 millions of soldiers, hundreds of thousands of police 19:45:45
4 officers, millions of civilians. 19:45:48
5 So it's not just because it is that 19:45:49
6 way. There's a reason that it is that way. It's 19:45:52
7 because it's the best design. 19:45:54
8 Q. Sure. 19:45:55
9 But this particular pistol grip, 19:45:56
10 that you're looking at in Kapelsohn Exhibit 5, could 19:45:59
11 enable someone to clear a malfunction, right? 19:46:03
12 A. You could clear a malfunction with no 19:46:05
13 stock on the weapon at all. You could grab the 19:46:09
14 barrel with your teeth. You could wedge the rifle 19:46:12
15 between your knees. Anything could allow someone to 19:46:16
16 clear a malfunction. That's not the point. The 19:46:19
17 point is, is it awkward or is it useful. 19:46:22
18 Q. Sure. Sir, I have questions to ask you. 19:46:25
19 Thank you. 19:46:26
20 A. I have answers to give you, sir. 19:46:29
21 Q. You have answers to give me, when I ask 19:46:31
22 you questions. Thank you. 19:46:32
23 A. That's right. That's what I was doing. 19:46:33
24 I'm not -- I'm not here to be beat up by you, sir. 19:46:37
25 Q. I'm not -- excuse me. 19:46:38

1 Looking back at -- at Kapelsohn 19:46:40

2 Exhibit 5, looking at this image, an individual can 19:46:45

3 wrap their thumb around that grip to clear that 19:46:48

4 weapon of a malfunction, yes or no? 19:46:52

5 A. Yes, they can. 19:46:54

6 Q. Thank you. 19:46:59

7 Looking at another image of a -- a 19:47:02

8 grip, I don't know whether we should talk about that 19:47:05

9 one. I -- I think we have exhausted the pistol grip 19:47:08

10 issue. 19:47:10

11 Going back to the shotgun that you 19:47:12

12 demonstrated, you said that was a Remington Model 19:47:15

13 870, right? 19:47:19

14 A. Correct. 19:47:20

15 Q. And that's a -- a shotgun issued to law 19:47:22

16 enforcement, is that right? 19:47:23

17 A. Yes. 19:47:24

18 Q. And there's a civilian version of that 19:47:27

19 shotgun, I think you mentioned? 19:47:29

20 A. There's no difference. It's -- it's the 19:47:30

21 most popular pump-action shotgun used by the civilian 19:47:35

22 world, and the most popular pump-action shotgun used 19:47:38

23 by the police world. And it has been since the mid 19:47:40

24 1950s. And it's also been used by our military. 19:47:44

25 Q. I didn't ask for a narrative, 19:47:45

1 Mr. Kapelsohn. 19:47:46

2 But you did refer, in your 19:47:49

3 testimony, to a 11-87. That's a number that I have 19:47:53

4 written down. We can go -- we can have Suzanne go 19:47:55

5 back into your testimony, but did you provide a 19:47:59

6 different model number for a civilian version of that 19:48:03

7 shotgun? 19:48:03

8 A. No. You misunderstood. The 11-87 is 19:48:06

9 Remington's similar semiautomatic shotgun. 19:48:16

10 Q. Okay. So the Remington Model 870 that 19:48:18

11 you're referring to is not a semiautomatic shotgun? 19:48:22

12 A. I have said it several times. It's a 19:48:24

13 pump-action shotgun. 19:48:28

14 Q. Well, I might have you say it again. 19:48:31

15 A. It's a pump-action shotgun. 19:48:35

16 MR. ECHEVERRIA: Yeah, Mr. Lee, I'd 19:48:36

17 appreciate if you instructed your witness to just 19:48:37

18 answer my questions, please. 19:48:47

19 BY MR. ECHEVERRIA: 19:48:48

20 Q. So taking the Remington Model 11-87. 19:48:50

21 Which is, as you stated, a -- the semiautomatic 19:48:57

22 version of the 870? 19:48:59

23 A. I didn't say that. 19:49:05

24 Q. I'm sorry, what? You -- you just 19:49:07

25 interrupted me, again, Mr. Kapelsohn. What -- what 19:49:09

1 was that? 19:49:09

2 A. I said, I didn't say that. It is not the 19:49:12

3 semiautomatic version of the 870. I said it's a 19:49:15

4 similar shotgun by Remington. It is semiautomatic. 19:49:22

5 Q. Okay. Thank you for clarifying. 19:49:23

6 Let's take a semiautomatic shotgun 19:49:26

7 that has -- let's -- let's take the shotgun that you 19:49:30

8 were using in your demonstration. It had a 19:49:33

9 telescopic stock and a pistol grip protruding from 19:49:37

10 the bottom of the action, right? 19:49:39

11 A. Correct. 19:49:45

12 Q. Okay. Under California law, if that 19:49:46

13 shotgun did not have a pistol grip, would it be an 19:49:50

14 assault weapon? 19:49:51

15 A. I don't know. I'd have to look at your 19:49:54

16 law. 19:49:54

17 Q. Yeah, let's refer to the law. 19:49:57

18 MR. LEE: And you're assuming, for 19:49:59

19 purposes of this question, that it's semiautomatic, 19:50:01

20 right? 19:50:02

21 MR. ECHEVERRIA: I am. 19:50:03

22 MR. LEE: Okay. 19:50:03

23 MR. ECHEVERRIA: Yeah, I -- I 19:50:05

24 understand that the weapon that got used in the 19:50:06

25 demonstration was not a semiautomatic shotgun. 19:50:09

1 MR. LEE: Right. 19:50:09

2 MR. ECHEVERRIA: But it has similar 19:50:11

3 features and -- and design -- and a design that I 19:50:13

4 wanted to ask questions about. 19:50:15

5 MR. LEE: Understood. 19:50:17

6 BY MR. ECHEVERRIA: 19:50:17

7 Q. So I'm looking at Page 2 of Kapelsohn 19:50:20

8 Exhibit 2, California Penal Code Section 30515(a)(6) 19:50:27

9 defines as an assault weapon a semiautomatic shotgun 19:50:30

10 that has both of the following. 19:50:33

11 Do you see that, sir? 19:50:35

12 A. I do. 19:50:38

13 Q. So in order to be an assault weapon, 19:50:40

14 under California law, a semiautomatic shotgun has to 19:50:42

15 have both of these features? 19:50:44

16 A. Yes, yes, sir. 19:50:52

17 Q. I'm sorry? 19:50:52

18 A. Yes, sir. 19:50:52

19 Q. So first, it has to have a folding or 19:50:53

20 telescoping stock, and then second, it has to have a 19:50:57

21 pistol grip beneath the action, is that right? 19:51:00

22 A. Yes, sir. 19:51:00

23 Q. Or in -- as an alternative to a pistol 19:51:03

24 grip, a thumbhole stock or a vertical handgrip, 19:51:06

25 right? 19:51:07

1	A.	Yes.	19:51:12
2	Q.	So the benefits that you were describing	19:51:14
3		about the telescopic stock for a shotgun could still	19:51:17
4		be provided to an owner of a shotgun under California	19:51:21
5		law, provided that the shotgun does not also have a	19:51:24
6		pistol grip beneath the action, is that right?	19:51:29
7	A.	Yes, but for one little problem. Would	19:51:35
8		you like to know what that is?	19:51:39
9	Q.	Sure.	19:51:46
10	A.	Can you see the shotgun I'm holding up	19:51:49
11		right now?	19:51:49
12	Q.	Yes.	19:51:50
13	A.	This pistol grip is integral with the	19:51:51
14		stock, that is the recoil reducing telescoping stock.	19:51:54
15		This is the most commonly available, most popular,	19:51:58
16		most successful model of telescoping recoil reducing	19:52:02
17		stock for shotguns. The pistol grip is molded in as	19:52:07
18		part of it.	19:52:07
19		Are there telescoping stocks that	19:52:10
20		are available separately, yes. Do some of them	19:52:14
21		reduce recoil, I think there are some. But most of	19:52:17
22		them are both features in one -- in one model.	19:52:22
23	Q.	Okay. Thank you.	19:52:23
24		MR. ECHEVERRIA: I have no further	19:52:24
25		questions.	19:52:26

1 MR. LEE: Okay. That's it. 19:52:27

2 Nothing further. 19:52:32

3 THE VIDEOGRAPHER: The time is now 19:52:33

4 approximately 7:53 p.m. We are now going off the 19:52:37

5 record. This concludes the deposition. 19:52:39

6

7 (Deposition concluded at 7:53 p.m.)

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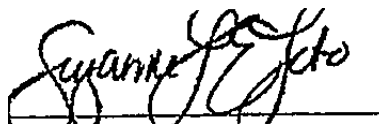
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C E R T I F I C A T E

I do hereby certify that I am a Notary Public
in good standing, that the aforesaid testimony
was taken before me, pursuant to notice, at the
time and place indicated; that said deponent
was by me duly sworn to tell the truth, the
whole truth, and nothing but the truth; that
the testimony of said deponent was correctly
recorded in machine shorthand by me and
thereafter transcribed under my supervision
with computer-aided transcription; that the
deposition is a true and correct record of the
testimony given by the witness; and that I am
neither of counsel nor kin to any party in said
action, nor interested in the outcome thereof.

WITNESS my hand and official seal this 18th day
of January, 2021.

A handwritten signature in black ink, appearing to read "Suzanne J. Gato", is written over a horizontal line.

Notary Public

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[22-12 - able]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY**

ASSOCIATION OF NEW JERSEY RIFLE & PISTOL CLUBS, INC., et al., Plaintiffs, v. PLATKIN, et al., Defendants.	Civil Action No. 3:18-cv-10507
CHEESEMAN, et al., Plaintiffs, v. PLATKIN, et al., Defendants.	Civil Action No. 1:22-cv-4360
ELLMAN, et al., Plaintiffs, v. PLATKIN, et al., Defendants.	Civil Action No. 3:22-cv-04397

Expert Report of Lucy P. Allen

June 16, 2023

EXHIBIT

7

I, Lucy P. Allen, the undersigned, declare as follows:

1. I am a Senior Managing Director of NERA Economic Consulting (“NERA”), a member of NERA’s Securities and Finance Practice and Chair of NERA’s Product Liability and Mass Torts Practice. NERA provides practical economic advice related to highly complex business and legal issues arising from competition, regulation, public policy, strategy, finance, and litigation. NERA was established in 1961 and now employs approximately 500 people in more than 20 offices worldwide.

2. In my over 25 years at NERA, I have been engaged as an economic consultant or expert witness in numerous projects involving economics and statistics. I have been qualified as an expert and testified in court on various economic and statistical issues relating to the flow of guns into the criminal market. I have testified at trials in Federal and State Courts, before the New York City Council Public Safety Committee, the American Arbitration Association, and the Judicial Arbitration Mediation Service, as well as in depositions.

3. I have an A.B. from Stanford University, an M.B.A. from Yale University, and M.A. and M. Phil. degrees in Economics, also from Yale University. Prior to joining NERA, I was an Economist for both President George H. W. Bush’s and President Bill Clinton’s Council of Economic Advisers. My resume with recent publications and testifying experience is included as Exhibit A.

4. I have been asked by the New Jersey Office of the Attorney General to address the following issues: (a) the number of rounds of ammunition fired by individuals using a gun in self-defense¹ and (b) the outcomes when assault weapons and large-capacity magazines are used in public mass shootings, including the associated number of casualties. NERA is being compensated for time spent by me and my team at standard billing rates and for out-of-pocket expenses at cost. NERA currently bills for my time at \$1,150 per hour. NERA’s fees are not in any way contingent upon the outcome of this matter.

¹ I have also been asked to analyze the percent of incidents in which rifles were used in self-defense according to The Heritage Foundation’s “Defensive Gun Uses in the U.S.” database.

SUMMARY OF FINDINGS

5. Regarding the number of rounds fired by individuals using a gun in self-defense, I analyzed almost 1,000 real-life incidents of self-defense and found that it is extremely rare for a person, when using a firearm in self-defense, to fire more than 10 rounds. In particular, I performed an analysis of 736 incidents in the NRA Armed Citizen database, as well as our own systematic analysis of 200 Factiva news stories from a random sample of approximately 4,800 news stories describing incidents of self-defense with a firearm and found only 2 incidents where more than 10 rounds were used.²

6. Regarding the outcomes when assault weapons and large-capacity magazines are used in public mass shootings, I analyzed almost 200 mass shootings from four different sources between 1982 and 2022 and found that: (1) assault weapons and large-capacity magazines are often used in mass shootings; (2) both injuries and fatalities were higher in mass shootings that involved assault weapons and/or large-capacity magazines than in other mass shootings; (3) it is common for offenders to fire more than 10 rounds when using an assault weapon or a large-capacity magazine in mass shootings; and (4) the majority of guns used in mass shootings were obtained legally. These findings are consistent with other studies that have analyzed mass shootings, including studies based on alternate sets of mass shootings, covering different years and defining mass shootings somewhat differently.

² Note that these two incidents with more than 10 bullets fired by the defender were added to the NRA Armed Citizen database after an earlier analysis that I had conducted of the database in another case that was cited and relied upon by the court. See *Kolbe v. O'Malley*, 42 F. Supp. 3d 768 (D. Md. 2014) (“Allen’s use of the NRA database is appropriate and acceptable.” The Court also found that “The defendants’ expert, Lucy Allen, confirms that it is rare for a self-defender to fire more than ten rounds”). In addition, according to the news stories on these two incidents, the defenders did not appear to need to fire more than 10 shots to defend themselves. See “York County homeowner shoots at intruder,” NRA-ILA Armed Citizen, December 12, 2016 and “Homeowner fired at intruders,” NRA-ILA Armed Citizen, May 24, 2017.

OPINIONS

A. Use of Guns in Self-Defense

i. The number of rounds used by individuals in self-defense

7. Plaintiffs claim the large-capacity magazines (magazines capable of holding more than ten rounds, “Large Capacity Magazines”) and “assault weapons” covered by New Jersey Revised Statutes § 2C:39 and § 2C:58³ are commonly used for lawful purposes, including for self-defense.⁴

8. The number of rounds commonly needed by individuals to defend themselves cannot be practically or ethically determined with controlled scientific experiments and there is no source that systematically tracks or maintains data on the number of rounds fired by individuals in self-defense. Due to these limitations, I have analyzed available data sources to estimate the number of rounds fired by individuals to defend themselves. In particular, I have analyzed data from the NRA Institute for Legislative Action, as well as my own study of news reports on incidents of self-defense with a firearm. In all, I have analyzed almost 1,000 incidents of self-defense with a firearm and found that it is extremely rare for a person, when using a firearm in self-defense, to fire more than 10 rounds.

9. The NRA maintains a database of “Armed Citizen” stories describing private citizens who have successfully defended themselves, or others, using a firearm (“NRA Armed Citizen database”). According to the NRA, the “Armed Citizen” stories “highlight accounts of law-abiding gun owners in America using their Second Amendment rights to defend self, home

³ Under New Jersey Revised Statutes § 2C:39-1(w), a firearm is classified as an assault weapon if it is one of the firearm types and models listed or is “substantially identical” to any of the listed firearms. Examples of assault weapons include the “Armalite AR-180 type,” “Bushmaster Assault Rifle,” and “Calico M-900.” See, New Jersey Revised Statutes § 2C:39-1(w).

⁴ See, for example, Complaint for Declaratory and Injunctive Relief, filed July 1, 2022, (the “Ellman Complaint”) ¶¶1, 24, First Amended Complaint for Declaratory and Injunctive Relief, filed July 14, 2022 (the “Cheeseman Complaint”), ¶¶2-3, and Amended Complaint for Declaratory and Injunctive Relief, filed October 28, 2022 (the “ANJRPC Complaint”), ¶¶1, 29.

and family.”⁵ Although the methodology used to compile the NRA Armed Citizen database of stories is not explicitly detailed by the NRA, the NRA Armed Citizen database is a useful data source in this matter for at least three reasons. First, the Armed Citizen database was the largest collection of accounts of citizen self-defense compiled by others that I was able to find.⁶ Second, the incidents listed in the Armed Citizen database highlight the very conduct that Plaintiffs claim the New Jersey law impedes (*i.e.*, the use of firearms by law-abiding citizens for self-defense).⁷ Third, the Armed Citizen database is compiled by an entity that actively opposes restrictions on magazine capacity and restrictions on the possession and use of firearms in general.⁸ In light of the positions taken by the entity compiling the data, I would expect that any selection bias would be in favor of stories that put use of guns in self-defense in the best possible light and might highlight the apparent need of guns and/or multiple rounds in self-defense incidents.

10. My team and I performed an analysis of incidents in the NRA Armed Citizen database that occurred between January 2011 and May 2017.⁹ For each incident, the city/county, state, venue (whether the incident occurred on the street, in the home, or elsewhere) and the number of shots fired were tabulated.¹⁰ The information was gathered for each incident from

⁵ NRA Institute for Legislative Action, Armed Citizens, <https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017.

⁶ Note that in 2020, after the time my research was conducted, The Heritage Foundation began an online database of its own sample of defensive gun use incidents (<https://datavisualizations.heritage.org/firearms/defensive-gun-uses-in-the-us>).

⁷ See, for example, Ellman Complaint, ¶¶1, 24, Cheeseman Complaint, ¶¶2-3, and ANJRPC Complaint, ¶¶1, 29.

⁸ See, for example, NRA Civil Rights Defense Fund website, <http://www.nradefensefund.org/current-litigation.aspx>, accessed October 12, 2018.

⁹ My collection and coding of the NRA Armed Citizen stories was last performed in mid-2017.

¹⁰ The following incidents were excluded from the analysis: (1) duplicate incidents, (2) wild animal attacks, and (3) one incident where the supposed victim later pleaded guilty to covering up a murder. When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the story stated that “shots were fired” this would indicate that at least two shots were fired and thus we used the average number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.

both the NRA synopsis and, where available, an additional news story. An additional news story was found for over 95% of the incidents in the NRA Armed Citizen database.

9. According to this analysis of incidents in the NRA Armed Citizen database, it is extremely rare for a person, when using firearms in self-defense, to fire more than 10 rounds. Out of 736 incidents, there were 2 incidents (0.3% of all incidents), in which the defender was reported to have fired more than 10 bullets.¹¹ Defenders fired 2.2 shots on average.¹² In 18% of incidents the defender did not fire any shots; in 80% of incidents the defender fired 1 to 5 shots; in 2% of incidents the defender fired 6 to 10 shots; and in 0.3% of incidents the defender fired more than 10 shots.^{13,14} These incidents highlight the fact that in many instances defenders are able to defend themselves without firing any shots. For example, according to one of the incidents in the NRA Armed Citizen Database:

“A man entered a Shell station in New Orleans, La. and attempted to rob a cashier, by claiming he was carrying a gun. The cashier responded by retrieving a gun and leveling it at the thief, prompting the criminal to flee. (The Times Picayune, New Orleans, La. 09/02/15)”¹⁵

10. The table below summarizes these findings. (Note that we did not perform a New Jersey-specific analysis, as there were only six incidents in the NRA Armed Citizen database that

¹¹ As discussed above, these two incidents with more than 10 shots fired by the defender were added to the NRA Armed Citizen database after an earlier analysis that I had conducted of the database. Further, the defenders in these two incidents did not appear to need to fire more than 10 shots to defend themselves. See footnote 2 above.

¹² Note that the analysis is focused on shots fired when using a gun in self-defense and therefore the average includes instances when no shots are fired. If one calculates the average excluding incidents of self-defense with a gun without firing shots, the average is still low, 2.6 shots when at least one shot is fired.

¹³ The number of incidents, as well as the breakdown of incidents by number of shots fired, is similar for incidents inside the home vs. outside the home.

¹⁴ A separate study of incidents in the NRA Armed Citizen database for an earlier period (the five-year period from 1997 through 2001) found similar results. Specifically, this study found that, on average, 2.2 shots were fired by defenders and that in 28% of incidents of armed citizens defending themselves the individuals fired no shots at all. See, Claude Werner, “The Armed Citizen – A Five Year Analysis,” <https://tacticalprofessor.files.wordpress.com/2014/12/tac-5-year-w-tables.pdf>, accessed January 26, 2023.

¹⁵ “Gas station clerk scares off robber,” NRA-ILA Armed Citizen, September 9, 2015.

occurred in New Jersey. We found no indication that more than 10 shots were fired in any of these New Jersey incidents.)

**Breakdown of Incidents in NRA Armed Citizen Database
by Number of Shots Fired
January 2011 - May 2017**

# of Shots Fired	# of Incidents	% of Incidents
0	134	18.2%
1-5	587	79.8%
6-10	13	1.8%
More than 10	2	0.3%

Average Number of Shots Fired: 2.2

Notes and Sources:

Data from NRA Armed Citizen database covering 736 incidents from January 2011 through May 2017. Excludes duplicate incidents, wild animal attacks and one incident where the supposed victim later pleaded guilty to covering up a murder.

11. In addition to our analysis of incidents in the NRA Armed Citizen database, we performed a systematic, scientific study of news reports on incidents of self-defense with a firearm in the home, focusing on the same types of incidents as the NRA stories and covering the same time period.¹⁶

12. To identify relevant news stories to include in our analysis, we performed a comprehensive search of published news stories using Factiva, an online news reporting service and archive owned by Dow Jones, Inc. that aggregates news content from nearly 33,000

¹⁶ This analysis was initially conducted to research issues regarding self-defense in the home, which was a focus of federal Second Amendment jurisprudence before the 2022 *New York State Rifle & Pistol Association v. Bruen* Supreme Court decision. The analysis of the NRA Armed Citizen incidents described above indicates that the number of shots fired in self-defense outside the home is similar to those inside the home.

sources.¹⁷ The search was designed to return stories about the types of incidents that are the focus of the NRA Armed Citizen database and that Plaintiffs claim the New Jersey law impedes – in particular, the use of firearms for self-defense.¹⁸ The search identified all stories that contained the following keywords in the headline or lead paragraph: one or more words from “gun,” “shot,” “shoot,” “fire,” or “arm” (including variations on these keywords, such as “shooting” or “armed”), plus one or more words from “broke in,” “break in,” “broken into,” “breaking into,” “burglar,” “intruder,” or “invader” (including variations on these keywords) and one or more words from “home,” “apartment,” or “property” (including variations on these keywords).¹⁹ The search criteria matched approximately 90% of the NRA stories on self-defense with a firearm in the home, and an analysis of the 10% of stories that are not returned by the search shows that the typical number of shots fired in these incidents was no different than in other incidents. The search covered the same period used in our analysis of incidents in the NRA Armed Citizen database (January 2011 to May 2017). The region for the Factiva search was set to “United States.” The search returned approximately 35,000 stories for the period January 2011 to May 2017.²⁰

¹⁷ Factiva is often used for academic research. For example, a search for the term “Factiva” on Google Scholar yields over 28,000 results. As another example, a search on Westlaw yields at least 83 expert reports that conducted news searches using Factiva.

¹⁸ NRA Institute for Legislative Action, Armed Citizens, <https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017. See, also Ellman Complaint, ¶¶1, 24, Cheeseman Complaint, ¶¶2-3, and ANJRPC Complaint, ¶¶1, 29.

¹⁹ The precise search string used was: (gun* or shot* or shoot* or fire* or arm*) and (“broke in” or “break in” or “broken into” or “breaking into” or burglar* or intrud* or inva*) and (home* or “apartment” or “property”). An asterisk denotes a wildcard, meaning the search includes words which have any letters in place of the asterisk. For example, a search for shoot* would return results including “shoots,” “shooter” and “shooting.” The search excluded duplicate stories classified as “similar” on Factiva.

²⁰ The effect of using alternative keywords was considered. For example, removing the second category (“broke in” or “break in” or “broken into” or “breaking into” or burglar* or intrud* or inva*) and including incidents in which the assailant was already inside the home and/or was known to the victim was considered. *A priori*, there was no reason to believe that a larger number of shots would be used in these incidents and based on an analysis of the NRA stories we found that the number of shots fired in incidents when defending against someone already in the home was not different than those with an intruder.

13. Using a random number generator, a random sample of 200 stories was selected for each calendar year, yielding 1,400 stories in total.²¹ These 1,400 stories were reviewed to identify those stories that were relevant to the analysis, *i.e.*, incidents of self-defense with a firearm in or near the home. This methodology yielded a random selection of 200 news stories describing incidents of self-defense with a firearm in the home out of a population of approximately 4,800 relevant stories.²² Thus, out of the over 70 million news stories aggregated by Factiva between January 2011 and May 2017, approximately 4,800 news stories were on incidents of self-defense with a firearm in the home. We analyzed a random selection of 200 of these stories.

14. For each news story, the city/county, state and number of shots fired were tabulated. When tabulating the number of shots fired, we used the same methodology as we used to analyze stories in the NRA Armed Citizen database.²³ We then identified other stories describing the same incident on Factiva based on the date, location and other identifying information, and recorded the number of times that each incident was covered by Factiva news stories.

15. To determine the average number of shots fired per *incident*, we first determined the average number of shots fired per *story* and then analyzed the number of stories per incident. According to our study of a random selection from approximately 4,800 relevant stories on Factiva describing incidents of self-defense with a firearm in the home, the average number of

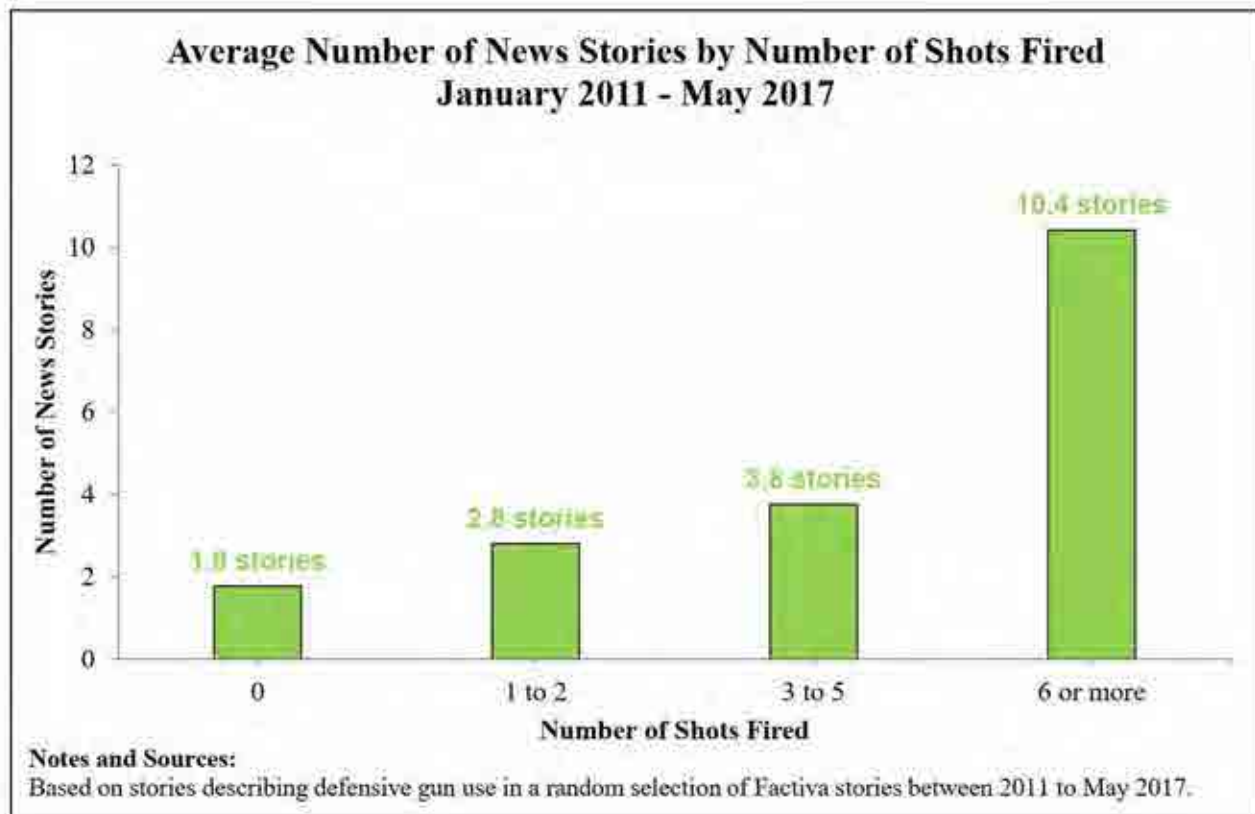
²¹ The random numbers were generated by sampling with replacement.

²² The approximately 4,800 relevant news stories were estimated by calculating the proportion of relevant news stories from the 200 randomly selected stories each year and applying that proportion to the number of results returned by the search for each year of the analysis. For example, in 2017, 33 out of 200 (17%) randomly selected news stories involved incidents of self-defense with a firearm in the home. Applying that proportion to the 1,595 results from the Factiva search in 2017 yields 263 relevant news stories in 2017. This process was repeated every year to arrive at a total of 4,841 relevant news stories from 2011-2017.

²³ When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the story stated that "shots were fired" this would indicate that at least two shots were fired and thus we used the average number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.

shots fired per story was 2.61. This is not a measure of the average shots fired *per incident*, however, because the number of stories covering an incident varies, and the variation is not independent of the number of shots fired. We found that there was a statistically significant relationship between the number of shots fired in an incident and the number of news stories covering the incident.²⁴ We found that on average the more shots fired in a defensive gun use incident, the greater the number of stories covering the incident. For example, as shown in the chart below, we found that incidents in Factiva news stories with zero shots fired were covered on average by 1.8 news stories, while incidents with six or more shots fired were covered on average by 10.4 different news stories.

²⁴ Based on a linear regression of the number of news stories as a function of the number of shots fired, the results were statistically significant at the 1% level (more stringent than the 5% level commonly used by academics and accepted by courts. See, for example, Freedman, David A., and David H. Kaye, "Reference Guide on Statistics," *Reference Manual on Scientific Evidence* (Washington, D.C.: The National Academies Press, 3rd ed., 2011), pp. 211-302, and Fisher, Franklin M., "Multiple Regression in Legal Proceedings," 80 *Columbia Law Review* 702 (1980).



16. After adjusting for this disparity in news coverage, we find that the average number of shots fired per incident covered is 2.34.²⁵ Note that this adjustment does not take into account the fact that some defensive gun use incidents may not be picked up by *any* news story. Given the observed relationship that there are more news stories when there are more shots fired, one would expect that the incidents that are not written about would on average have fewer shots than those with news stories. Therefore, the expectation is that these results, even after the

²⁵ The adjustment reflects the probability that a news story on a particular incident would be selected at random from the total population of news stories on incidents of self-defense with a firearm in the home. The formula used for the adjustment is:

$$\frac{\sum_{i=1}^n \left(\text{Shots Fired}_i \times \frac{R_i}{C_i} \right)}{\sum_{i=1}^n \left(\frac{R_i}{C_i} \right)}$$

where:

n = random selection of news stories on incidents of self-defense with a firearm in the home

R_i = number of search results on Factiva in the calendar year of incident i

C_i = number of news stories covering incident i

adjustment, are biased upward (*i.e.*, estimating too high an average number of shots and underestimating the percent of incidents in which no shots were fired).

17. As shown in the table below, according to the study of Factiva news stories, in 11.6% of incidents the defender did not fire any shots, and simply threatened the offender with a gun. In 97.3% of incidents the defender fired five or fewer shots. There were no incidents where the defender was reported to have fired more than 10 bullets.

Number of Shots Fired in Self-Defense in the Home Based on Random Selection of Articles from Factiva January 2011 - May 2017

	<u>Incidents in the Home</u>
Estimated population of news reports in Factiva on self-defense with a firearm in the home	4,841
Random selection of news reports	200
Average Number of Shots Fired	2.34
Median Number of Shots Fired	2.03
Number of Incidents with No Shots Fired	23
Percent of Incidents with No Shots Fired	11.6%
Number of Incidents with <=5 Shots Fired	195
Percent of Incidents with <=5 Shots Fired	97.3%
Number of Incidents with >10 Shots Fired	0
Percent of Incidents with >10 Shots Fired	0.0%

Notes and Sources:

Based on news stories describing defensive gun use in a random selection of Factiva stories 2011 to May 2017 using search string (gun* or shot* or shoot* or fire* or arm*) and ("broke in" or "break in" or "broken into" or "breaking into" or burglar* or intrud* or inva*) and (home* or "apartment" or "property") with region set to United States and excluding duplicate stories classified as "similar."

Calculated using weights reflecting the probability that a news story on a particular incident would be selected at random from the total population of news stories on incidents of self-defense with a firearm in the home.

18. In sum, an analysis of incidents in the NRA Armed Citizen database, as well as my own study of a random sample from approximately 4,800 news stories describing incidents of self-defense with a firearm, indicates that it is extremely rare for a person, when using a firearm in self-defense, to fire more than 10 rounds. I have analyzed almost 1,000 incidents of

self-defense (736 incidents from the NRA Armed Citizen database and 200 stories from Factiva) and in only 2 incidents were more than 10 rounds used.²⁶ Thus, in only 0.2% of reported incidents of self-defense with a firearm were more than 10 rounds used. However, given that this rate excludes incidents with no news coverage, the 0.2% rate is an overestimation of the percent of self-defense incidents in which more than 10 rounds were used because fewer shots means less news coverage.

ii. Percent of incidents in which rifles were used in self-defense according to the Heritage Defensive Gun Uses Database

19. I have been asked to analyze The Heritage Foundation's "Defensive Gun Uses in the U.S." database ("Heritage DGU Database"), a database of defensive gun incidents that was first published after my research on the number of rounds used by individuals in self-defense was performed.²⁷ In particular, I have been asked to analyze the percent of incidents in which rifles were used in self-defense according to the Heritage DGU Database. The analysis of the Heritage DGU Database indicates that it is rare for a rifle to be used in self-defense.

20. The Heritage Foundation is a think tank focused on "formulat[ing] and promot[ing] public policies based on the principles of free enterprise, limited government, individual freedom, traditional American values, and a strong national defense."²⁸ According to The Heritage Foundation, "[t]he right of the people to keep and bear arms is a fundamental part of American liberty, serving as an important individual defense against crime and a collective defense against tyranny."²⁹

²⁶ As discussed above, these two incidents with more than 10 shots fired by the defender were added to the NRA Armed Citizen database after an earlier analysis that I had conducted of the database. Further, the defenders in these two incidents did not appear to need to fire more than 10 shots to defend themselves. See footnote 2 above.

²⁷ "Defensive Gun Uses in the U.S.," *The Heritage Foundation*, as of October 7, 2022, <https://datavisualizations.heritage.org/firearms/defensive-gun-uses-in-the-us>.

²⁸ "About Heritage," *The Heritage Foundation*, <https://www.heritage.org/about-heritage/mission>.

²⁹ "Firearms," *The Heritage Foundation*, <https://www.heritage.org/firearms>.

21. In April 2020, The Heritage Foundation began publishing and periodically updating a database of news stories describing incidents in the U.S. in which individuals purportedly defended themselves using firearms.³⁰ The Heritage Foundation notes that its database is not comprehensive but meant to “highlight” stories of successful self-defense.^{31,32}

22. As of October 7, 2022, the Heritage DGU Database included 2,714 incidents from January 1, 2019 through October 6, 2022.³³ The Heritage DGU Database codes the following information for each incident:³⁴

- Date of the incident;
- Website link to the news story;
- Location (city and state);
- Context (e.g., domestic violence, home invasion, robbery, etc.);
- Whether the defender had a concealed-carry permit;
- Whether there were multiple assailants;
- Whether shots were fired; and
- Firearm type (handgun, shotgun, rifle, pellet rifle, long gun, or unknown).³⁵

23. I performed an analysis of all 2,714 incidents in the Heritage DGU Database as of October 7, 2022, to determine what number and percent of the incidents involved a rifle. I found there were 51 incidents indicating a rifle was involved. These 51 incidents represent 2% of all incidents in the database and 4% of incidents with a known gun type.³⁶ The table below shows the breakdown of incidents by coded firearm type for the 2,714 incidents.

³⁰ “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

³¹ “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

³² Note that a review of the news stories cited in the database indicates that a number of the incidents may not involve individuals defending themselves. For example, in one incident (“Two Burglary Suspects Caught By Victim’s Brother And Friend, Held At Gunpoint For Police,” *5NewsOnline*, February 11, 2019), a homeowner’s brother and friend appear to have found and apprehended burglars on the roadside.

³³ “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

³⁴ “Defensive Gun Uses in the U.S.,” *The Heritage Foundation*.

³⁵ A review of the data and linked news stories from the Heritage DGU Database indicates that the firearm type corresponds to the firearm associated with the defender.

³⁶ This analysis is based on The Heritage Foundation’s coding of these incidents. We have not independently verified the coding of these incidents.

The Heritage Foundation Defensive Gun Uses Database

<u>Firearm Type</u>	<u>Incidents¹</u>	<u>% of Total</u>	<u>% of Known</u>
(1)	(2)	(3)	(4)
Handgun	1,113	41%	90%
Shotgun	78	3%	6%
Rifle	51	2%	4%
Long Gun	1	0%	0%
Pellet Rifle	1	0%	0%
Unknown	1,473	54%	
Total known:	1,241		
Total:	2,714		

Source:

"Defensive Gun Uses in the U.S.," *The Heritage Foundation*.
Data as of October 7, 2022.

¹ Note that three incidents are coded as having more than one
firearm type and thus the sum by firearm type is larger than
the total number of incidents.

24. I conducted the same analysis of the Heritage DGU Database excluding incidents that occurred in states that had restrictions on assault weapons in 2022. In particular, I excluded incidents in California, Connecticut, Hawaii, Maryland, Massachusetts, New Jersey, and New York, as well as Washington D.C.³⁷ In states without assault weapons restrictions, the Heritage

³⁷ See, "Assault Weapons," *Giffords Law Center*, <https://giffords.org/lawcenter/gun-laws/policy-areas/hardware-ammunition/assault-weapons/>. Delaware is not excluded since restrictions in Delaware were enacted in June 2022. See, "Governor Carney Signs Package of Gun Safety Legislation," *Delaware.gov*, June 30, 2022, <https://news.delaware.gov/2022/06/30/governor-carney-signs-package-of-gun-safety-legislation/>.

DGU Database has 48 incidents indicating a rifle was involved. These 48 incidents represent 2% of incidents in these states and 4% of incidents with a known gun type in these states. The table below shows the breakdown of incidents by coded firearm type for states that do not restrict assault weapons.

**The Heritage Foundation
Defensive Gun Uses Database
States Without Assault Weapon Restrictions**

Firearm Type	Incidents¹	% of Total	% of Known
(1)	(2)	(3)	(4)
Handgun	1,033	41%	90%
Shotgun	63	3%	6%
Rifle	48	2%	4%
Long Gun	0	0%	0%
Pellet Rifle	1	0%	0%
Unknown	1,357	54%	
Total known:	1,142		
Total:	2,499		

Source:

"Defensive Gun Uses in the U.S.," *The Heritage Foundation*.
Data as of October 7, 2022. Excludes the following states
with assault weapon restrictions: California, Connecticut,
Hawaii, Maryland, Massachusetts, New Jersey, and New York
as well as Washington D.C. Classification from Giffords
Law Center. Incidents in Delaware not excluded as
restrictions were enacted in June 2022.

¹ Note that three incidents are coded as having more than one
firearm type and thus the sum of the individual firearm
types is larger than the total number of incidents.

B. Public Mass Shootings

25. We analyzed the use of assault weapons and Large-Capacity Magazines³⁸ in public mass shootings using four sources for identifying public mass shootings: Mother Jones,³⁹ the Citizens Crime Commission of New York City,⁴⁰ The Washington Post,⁴¹ and The Violence Project.^{42, 43} The analysis focused on public mass shootings because it is my understanding that the state of New Jersey is concerned about public mass shootings and enacted the challenged law, in part, to address the problem of public mass shootings.⁴⁴

³⁸ My analysis is based on the definitions of assault weapons (“Assault Weapons”) provided by California law, specifically: California Penal Code sections 30510 and 30515, and California Code of Regulations, title 11, section 5499. California law defines Assault Weapons based on either their “make and model” or on certain “features.” See, for example, California Department of Justice: “What is considered an assault weapon under California law?” and “What are AK and AR-15 series weapons?” <https://oag.ca.gov/firearms/regagunfaqs>, accessed October 25, 2018.

³⁹ “US Mass Shootings, 1982-2022: Data From Mother Jones’ Investigation,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data>.

⁴⁰ “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens Crime Commission of New York City, February 2018 update. Additional details on the mass shootings were obtained from an earlier source by the Citizens Crime Commission. “Mass Shooting Incidents in America (1984-2012),” Citizens Crime Commission of New York City, <http://www.nycrimecommission.org/mass-shooting-incidents-america.php>, accessed June 1, 2017.

⁴¹ “The terrible numbers that grow with each mass shooting,” The Washington Post, updated May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

⁴² “Mass Shooter Database,” The Violence Project, <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14, 2022.

⁴³ When I began research in 2013 on mass shootings, I found Mother Jones and Citizens Crime Commission to maintain the most comprehensive lists of relevant mass shootings. More recently, two additional sources, The Washington Post and The Violence Project, have compiled lists of public mass shootings. The Violence Project began work on its mass shootings database in September 2017 and its database first went online in November 2019, while The Washington Post first published its mass shootings database on February 14, 2018. There is substantial overlap between the mass shootings in all four sources. For example, the Mother Jones data contains 93% of the mass shootings in the Citizens Crime Commission data for the years covered by both data sources, 1984 to 2016, while The Washington Post contains 94% of the mass shootings in The Violence Project data for the years covered by both data sources, 1966 to 2019.

⁴⁴ See, for example, State of New Jersey Senate Resolution No. 51, February 24, 2020, (“In 1990 New Jersey recognized that assault weapons posed a serious threat...”).

26. The type of incident considered a mass shooting is generally consistent across the four sources: all four sources consider an event a mass shooting if four or more people were killed in a public place in one incident, excluding incidents involving other criminal activity such as a robbery.⁴⁵

⁴⁵ Citizens Crime Commission describes a mass shooting as “four or more victims killed” in “a public place” that were “unrelated to another crime (e.g., robbery, domestic violence).” Citizens Crime Commission notes that its sources include “news reports and lists created by government entities and advocacy groups.” “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens Crime Commission of New York City, February 2018 update.

Mother Jones describes mass shootings as “indiscriminate rampages in public places resulting in four or more victims killed by the attacker,” excluding “shootings stemming from more conventionally motivated crimes such as armed robbery or gang violence.” Although in January 2013 Mother Jones changed its definition of mass shooting to include instances when three or more people were killed, for this report we only analyzed mass shootings where four or more were killed to be consistent with the definition of the other three sources. “A Guide to Mass Shootings in America,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/07/mass-shootings-map>. See also, “What Exactly is a Mass Shooting,” Mother Jones, August 24, 2012, <http://www.motherjones.com/mojo/2012/08/what-is-a-mass-shooting>.

The Washington Post describes a mass shooting as “four or more people were killed, usually by a lone shooter” excluding “shootings tied to robberies that went awry” and “domestic shootings that took place exclusively in private homes.” The Washington Post notes that its sources include “Grant Duwe, author of ‘Mass Murder in the United States: A History,’ Mother Jones and Washington Post research,” as well as “Violence Policy Center, Gun Violence Archive; FBI 2014 Study of Active Shooter Incidents; published reports.” “The terrible numbers that grow with each mass shooting,” The Washington Post, updated May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

The Violence Project indicates that it uses the Congressional Research Service definition of a mass shooting: “a multiple homicide incident in which four or more victims are murdered with firearms—not including the offender(s)—within one event, and at least some of the murders occurred in a public location or locations in close geographical proximity (e.g., a workplace, school, restaurant, or other public settings), and the murders are not attributable to any other underlying criminal activity or commonplace circumstance (armed robbery, criminal competition, insurance fraud, argument, or romantic triangle).” The Violence Project notes that its sources include “Primary Sources: Written journals / manifestos / suicide notes etc., Social media and blog posts, Audio and video recordings, Interview transcripts, Personal correspondence with perpetrators” as well as “Secondary Sources (all publicly available): Media (television, newspapers, magazines), Documentary films, Biographies, Monographs, Peer-reviewed journal articles, Court transcripts, Law Enforcement records, Medical records, School records, Autopsy reports.” “Mass Shooter Database,” The Violence Project, <https://www.theviolenceproject.org/methodology/>, accessed January 17, 2020.

27. Each of the four sources contains data on mass shootings covering different time periods. The Mother Jones data covers 112 mass shootings from 1982 to October 13, 2022,⁴⁶ the Citizens Crime Commission data covers 80 mass shootings from 1984 to February 2018,⁴⁷ The Washington Post data covers 185 mass shootings from 1966 to May 12, 2021,⁴⁸ and The Violence Project data covers 182 mass shootings from 1966 to May 14, 2022.^{49, 50}

28. Note that the two more recently compiled sources of mass shootings, The Washington Post and The Violence Project, include additional mass shootings that were not covered by either Mother Jones or Citizens Crime Commission. In general, we found that these additional mass shootings were less covered by the media and involved fewer fatalities and/or injuries than the ones previously identified by Mother Jones or Citizens Crime Commission. For example, using the mass shooting data for the period 1982 through 2019, we found that the median number of news stories for a mass shooting included in Mother Jones and/or Citizens

⁴⁶ “A Guide to Mass Shootings in America,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/07/mass-shootings-map>. Excludes mass shootings where only three people were killed. Note this analysis of the Mother Jones data may not match other analyses because Mother Jones periodically updates its historical data.

⁴⁷ “Mayhem Multiplied: Mass Shooters and Assault Weapons,” *Citizens Crime Commission of New York City*, February 2018 update.

⁴⁸ “The terrible numbers that grow with each mass shooting,” *The Washington Post*, updated May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

⁴⁹ “Mass Shooter Database,” *The Violence Project* <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14, 2022.

⁵⁰ Note that I have updated this mass shooting analysis to include more recent incidents, as well as more recently available details. In my 2017 declaration in *Duncan v. Bonta*, I included data on mass shootings through April 2017. In my 2018 declaration in *Rupp v. Becerra*, I updated the analysis to include data on mass shootings through September 2018. The analyses in both of these declarations included mass shootings only from Mother Jones and the Citizens Crime Commission. In my 2020 declaration in *James Miller v. Becerra*, I updated the analysis to include mass shootings through December 2019 and added mass shootings from two more sources, The Washington Post and The Violence Project. The number of mass shootings, as well as some details about the shootings, are not identical across these declarations for three main reasons. First, I have updated the analysis to include more recent incidents as well as more recently available details. Second, starting in 2020, I added two more sources (The Washington Post and The Violence Project), which include additional mass shootings and details not included in the initial sources. Third, even though Mother Jones included instances when three or more people were killed, for my declarations and reports starting in 2020, I only included mass shootings where four or more were killed to be consistent with the definition of the other three sources.

Crime Commission was 317, while the median for the additional mass shootings identified in The Washington Post and/or The Violence Project was 28.⁵¹ In addition, using the mass shooting data through 2019, we found an average of 21 fatalities or injuries for a mass shooting included in Mother Jones and/or Citizens Crime Commission, while only 6 fatalities or injuries for the additional mass shootings identified in The Washington Post and/or The Violence Project.

29. We combined the data from the four sources for the period 1982 through October 2022, and searched news stories on each mass shooting to obtain additional details on the types of weapons used and data on shots fired where available. We compared the details on the weapons used in each shooting to the list of prohibited firearms and features specified in California law to identify, based on this publicly available information, which mass shootings involved the use of Assault Weapons. In addition, we identified, based on this publicly available information, which mass shootings involved the use of Large-Capacity Magazines. See attached Exhibit B for a summary of the combined data, and Exhibit C for a summary of the weapons used in each public mass shooting based on Mother Jones, Citizens Crime Commission, The Washington Post, The Violence Project, and news reports.⁵²

i. The use of Assault Weapons in public mass shootings

30. Based on the 179 mass shootings through October 2022, we found that Assault Weapons are often used in public mass shootings. Whether an Assault Weapon was used in a mass shooting can be determined in 153 out of the 179 incidents (85%) considered in this analysis. Out of these 153 mass shootings, 36 (or 24%) involved Assault Weapons. Even assuming the mass shootings where it is not known whether an Assault Weapon was used *all* did not involve an Assault Weapon, 36 out of 179 mass shootings, or 20%, involved Assault Weapons.

⁵¹ The search was conducted over all published news stories on Factiva. The search was based on the shooter's name and the location of the incident over the period from one week prior to three months following each mass shooting.

⁵² Note that the Citizens Crime Commission data was last updated in February 2018 and The Washington Post was last updated in May 2021.

ii. The use of Large-Capacity Magazines in public mass shootings

31. Based on the 179 mass shootings through October 2022, we found that Large-Capacity Magazines (those with a capacity to hold more than 10 rounds of ammunition) are often used in public mass shootings. Magazine capacity is known in 115 out of the 179 mass shootings (or 64%) considered in this analysis. Out of the 115 mass shootings with known magazine capacity, 73 (or 63%) involved Large-Capacity Magazines. Even assuming the mass shootings with unknown magazine capacity *all* did not involve Large-Capacity Magazines, 73 out of 179 mass shootings or 41% of mass shootings involved Large-Capacity Magazines.

iii. Casualties in mass shootings involving Assault Weapons or Large-Capacity Magazines

32. Based on our analysis, casualties were higher in the mass shootings that involved Assault Weapons than in other mass shootings. In particular, we found an average number of fatalities or injuries of 36 per mass shooting with an Assault Weapon versus 10 for those without. Focusing on just fatalities, we found an average number of fatalities of 12 per mass shooting with an Assault Weapon versus 6 for those without.

33. Based on our analysis, casualties were higher in the mass shootings that involved weapons with Large-Capacity Magazines than in other mass shootings. In particular, we found an average number of fatalities or injuries per mass shooting with a Large-Capacity Magazine was 25 versus 9 for mass shootings where a Large-Capacity Magazine was not used. Focusing on just fatalities, we found that the average number of fatalities per mass shooting with a Large-Capacity Magazine was 10 versus 6 for those without.

34. In addition, we found that casualties were higher in the mass shootings that involved both Assault Weapons *and* Large-Capacity Magazines. In particular, we found an average number of fatalities or injuries of 40 per mass shooting with both an Assault Weapon and a Large-Capacity Magazine versus 8 for those without either. Focusing on just fatalities, we found an average number of fatalities of 13 per mass shooting with both an Assault Weapon and a Large-Capacity Magazine versus 6 for those without either. (See table below.)

Numbers of Fatalities and Injuries in Public Mass Shootings 1982 - October 2022

Weapon Used	# of Incidents	Average # of		
		Fatalities	Injuries	Total
Assault Weapon	36	12	24	36
No Assault Weapon	117	6	4	10
Unknown	26	5	3	9
Large-Cap. Mag.	73	10	16	25
No Large-Cap. Mag.	42	6	3	9
Unknown	64	5	3	7
Assault Weapon & Large-Cap. Mag.	31	13	27	40
Large-Cap. Mag. Only ¹	36	8	7	15
No Assault Weapon or Large-Cap. Mag. ²	41	6	3	8
Unknown ³	71	5	3	8

Notes and Sources:

Casualty figures exclude the shooter. Assault Weapon and large-capacity magazine classification and casualties updated based on review of stories from Factiva/Google searches.

¹ Shootings involving large-capacity magazine and no Assault Weapon.

² Shootings involving neither a large-capacity magazine nor Assault Weapon.

³ Shootings where it is either unknown whether a large-capacity magazine was involved or unknown whether an Assault Weapon was involved.

35. Our results are consistent with those of other studies that have analyzed mass shootings. Importantly, although the other studies are based on alternate sets of mass shootings, including covering different years and defining mass shootings somewhat differently, the results are consistent in finding that the number of fatalities and injuries is greater in mass shootings in which large capacity magazines and assault weapons are involved. A 2019 academic article published in the *American Journal of Public Health* by Klarevas et al. found that “[a]ttacks

involving LCMs resulted in a 62% higher mean average death toll.”⁵³ This study found an average number of fatalities of 11.8 per mass shooting with a large-capacity magazine versus 7.3 for those without. The results in this study were based on 69 mass shootings between 1990 and 2017.⁵⁴ An analysis of the mass shootings detailed in a 2016 article by Gary Kleck yielded similar results: 21 average fatalities or injuries in mass shootings involving large-capacity magazines versus 8 for those without.⁵⁵ The Kleck study covered 88 mass shooting incidents between 1994 and 2013.⁵⁶ In a 2018 study, Koper et al. found that mass shootings involving assault weapons and large-capacity magazines resulted in an average of 13.7 victims versus 5.2 for other cases.⁵⁷ The Koper et al. study covered 145 mass shootings between 2009 and 2015.⁵⁸ The table below summarizes their results.

⁵³ Louis Klarevas, Andrew Conner, and David Hemenway, “The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990–2017,” *American Journal of Public Health* (2019).

⁵⁴ The Klarevas et al. study defines mass shootings as “intentional crimes of gun violence with 6 or more victims shot to death, not including the perpetrators” and, unlike my analysis, does not exclude incidents in private places or incidents involving other criminal activity such as robbery.

⁵⁵ Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016).

⁵⁶ The Kleck study defines a mass shooting as “one in which more than six people were shot, either fatally or nonfatally, in a single incident.” See, Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016).

⁵⁷ Koper et al., “Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources,” *Journal of Urban Health* (2018).

⁵⁸ The Koper et al. study defined mass shootings as “incidents in which four or more people were murdered with a firearm, not including the death of the shooter if applicable and irrespective of the number of additional victims shot but not killed.”

Comparison of Studies on the Use of Large-Capacity Magazines in Mass Shootings

Source	Criteria		Time Period	# of Incidents	Avg. # of Fatalities + Injuries / Fatalities	
	# Victims	Other Criteria			With LCM	Without LCM
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Allen (2023) ¹	at least 4	Includes shootings "in a public place in one incident, and exclude[s] incidents involving other criminal activity such as a robbery"	1982-October 2022	179	25 / 10	9 / 6
Allen (2020) ²	killed ³		1982-2019	161	27 / 10	9 / 6
Kleck et al. (2016) ⁴	more than 6 shot	Excludes "spree shootings" and includes shootings in both "public" and "private" places	1994-2013	88	21 / n/a	8 / n/a
Klarevas et al. (2019) ⁵	at least 6 killed ³	Includes "intentional crimes of gun violence"	1990-2017	69	n/a / 12	n/a / 7
Koper et al. (2018) ⁶	at least 4 killed ³	Includes shootings in both public and private places	2009-2015	145	14 / n/a	5 / n/a

Notes and Sources:

¹ Exhibit B of this report.

² Declaration of Lucy P. Allen in Support of Defendants' Opposition to Motion for Preliminary Injunction in *James Miller et al. v. Xavier Becerra et al.*, dated January 23, 2020.

³ Excluding shooter.

⁴ Kleck, Gary, "Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages," 17 Justice Research and Policy 28 (2016).

⁵ Klarevas et al., "The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings 1990-2017," American Journal of Public Health (2019).

⁶ Koper et al., "Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources," Journal of Urban Health (2018). Note that the Koper et al study includes shootings involving both LCM and assault weapons.

iv. The number of rounds fired in public mass shootings with Assault Weapons or Large-Capacity Magazines

36. The data on public mass shootings indicates that it is common for offenders to fire more than 10 rounds when using an Assault Weapon. Of the 36 mass shootings we analyzed through October 2022 that are known to have involved an Assault Weapon, there are 24 in which the number of shots fired is known. Shooters fired more than ten rounds in *all* 24 incidents, and the average number of shots fired was 149. In contrast, the average number of shots fired in mass shootings that did not involve an Assault Weapon was 38.

37. In addition, the data indicates that it is common for offenders to fire more than 10 rounds when using a gun with a Large-Capacity Magazine in mass shootings. Of the 73 mass shootings that are known to have involved a Large-Capacity Magazine, there are 49 in which the number of shots fired is known. Shooters fired more than ten rounds in 46 of the 49 incidents (or 94%), and the average number of shots fired was 99. In contrast, the average number of shots fired in mass shootings that did not involve a Large-Capacity Magazine was 16.

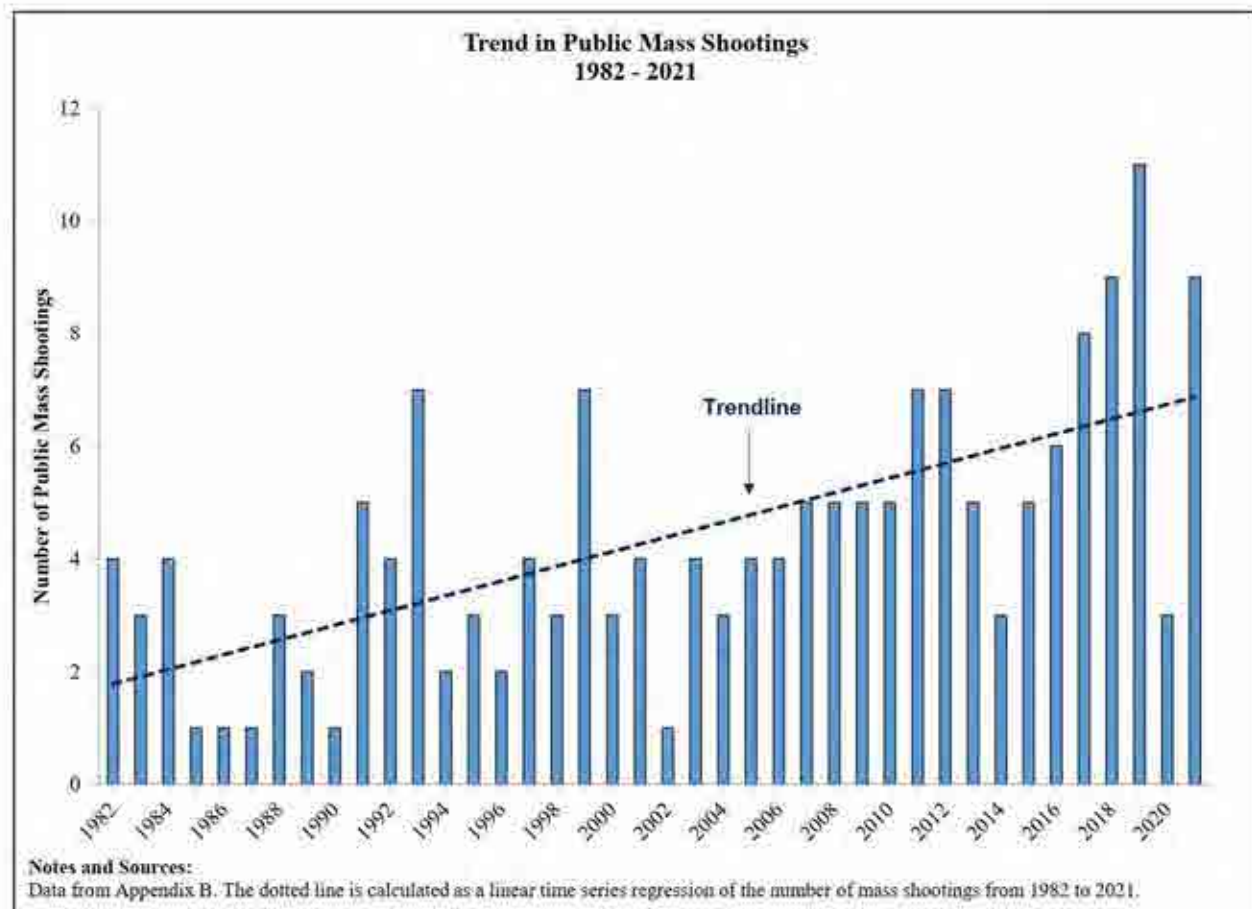
v. The percent of mass shooters' guns legally obtained

38. The data on public mass shootings indicates that the majority of guns used in these mass shootings were obtained legally.⁵⁹ Of the 179 mass shootings analyzed through October 2022, there are 112 where it can be determined whether the gun was obtained legally. According to the data, shooters in 79% of mass shootings obtained their guns legally (89 of the 112 mass shootings) and 80% of the guns used in these 112 mass shootings were obtained legally (202 of the 252 guns). (Even if one assumed that the guns were illegally obtained in all of the mass shootings where this question of legality is unknown, then one would find that in 50% of the mass shootings the guns were obtained legally and that 62% of the guns themselves were obtained legally.)

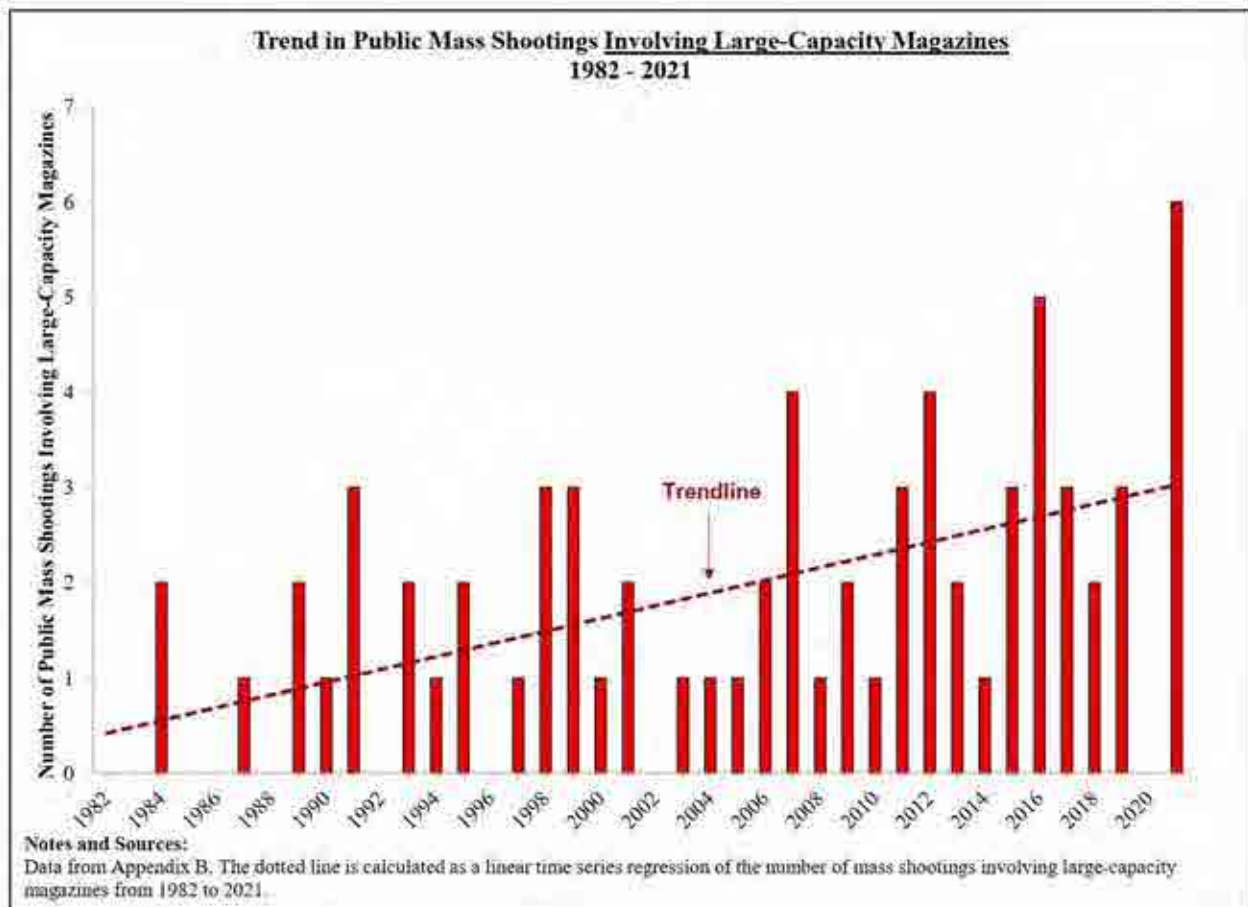
vi. Trends in the number of mass shootings

39. According to the data since 1982, the first year in our analysis, the number of public mass shootings per year has been increasing. The following chart shows the number of mass shootings per year during this period, along with a fitted trendline:

⁵⁹ The determination of whether guns were obtained legally is based on Mother Jones and The Washington Post reporting.



40. Focusing only on public mass shootings involving Large-Capacity Magazines, the data similarly shows that the number of public mass shootings with Large-Capacity Magazines has been increasing. The following chart shows the number of public mass shootings involving Large-Capacity Magazines per year, along with a fitted trendline:



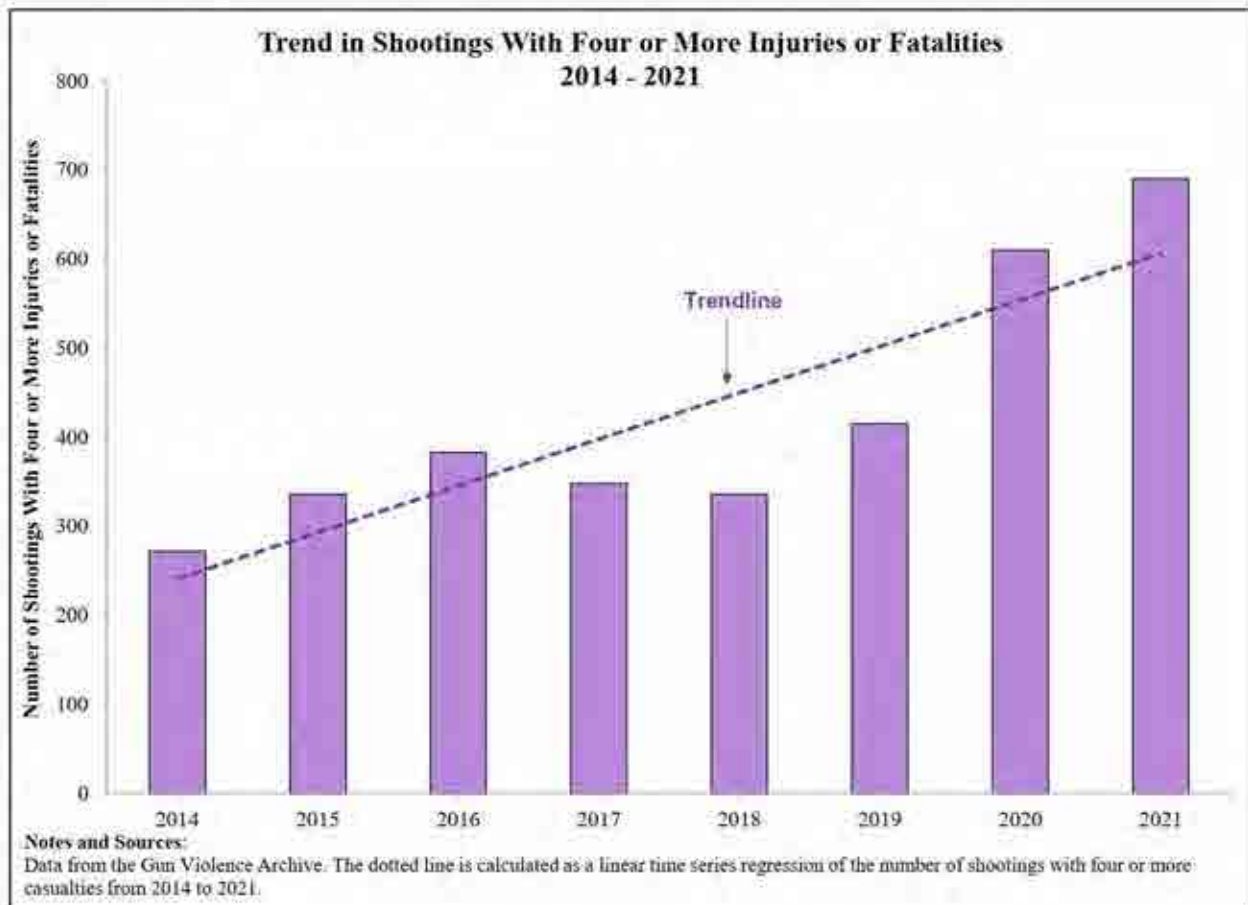
41. Focusing on a broader set of shooting incidents also shows an upward trend over time. In particular, data from the Gun Violence Archive (“GVA”) on shootings in which four or more victims were killed *or injured* in either a public place *or a home* shows that the number of shooting incidents within this broader category has also been increasing.⁶⁰ GVA maintains a “database of incidents of gun violence and gun crime,” based on information from “police, media, data aggregates, government and other sources” and has data starting in 2014.⁶¹ Note that the data indicates there is less news coverage for this broader set of shooting incidents versus public mass shootings and thus less information about the type of magazine used.⁶² The

⁶⁰ “General Methodology,” *Gun Violence Archive Website*, accessed on April 19, 2023.

⁶¹ “General Methodology,” *Gun Violence Archive Website*, accessed on April 19, 2023.

⁶² Analysis of the number of news stories covering shootings indicated that there is more news coverage on public mass shootings than mass shootings in the home. For example, our analysis indicated that the median number of news stories covering public mass shootings is approximately four times larger than for mass shootings in the home. See “Declaration of Lucy P. Allen,” dated February 6, 2023, in

following chart shows the number of shootings with four or more fatalities or injuries per year according to the GVA data, along with a fitted trendline:



Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Lucy P. Allen

Oregon Firearms Federation, Inc., et al., v. Tina Kotek, et al. In addition, the data indicates that when fatalities and/or casualties are higher there is more news coverage. For example, our analysis indicates that there are approximately four times more news stories covering mass shootings with six or more fatalities than those with fewer than six fatalities.



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Exhibit A

LUCY P. ALLEN SENIOR MANAGING DIRECTOR

Education

YALE UNIVERSITY
M.Phil., Economics, 1990
M.A., Economics, 1989
M.B.A., 1986

STANFORD UNIVERSITY
A.B., Human Biology, 1981

Professional Experience

1994-Present	<p>National Economic Research Associates, Inc. <u>Senior Managing Director.</u> Responsible for economic analysis in the areas of securities, finance and environmental and tort economics. <u>Managing Director (2016-2023).</u> <u>Senior Vice President (2003-2016).</u> <u>Vice President (1999-2003).</u> <u>Senior Consultant (1994-1999).</u></p>
1992-1993	<p>Council of Economic Advisers, Executive Office of the President <u>Staff Economist.</u> Provided economic analysis on regulatory and health care issues to Council Members and interagency groups. Shared responsibility for regulation and health care chapters of the <i>Economic Report of the President, 1993</i>. Working Group member of the President's National Health Care Reform Task Force.</p>
1986-1988 1983-1984	<p>Ayers, Whitmore & Company (General Management Consultants) <u>Senior Associate.</u> Formulated marketing, organization, and overall business strategies including: Plan to improve profitability of chemical process equipment manufacturer. Merger analysis and integration plan of two equipment manufacturers. Evaluation of Korean competition to a U.S. manufacturer.</p>

Diagnostic survey for auto parts manufacturer on growth obstacles.
Marketing plan to increase international market share for major accounting firm.

Summer 1985

WNET/Channel Thirteen, Strategic Planning Department

Associate. Assisted in development of company's first long-term strategic plan. Analyzed relationship between programming and viewer support.

1981-1983

Arthur Andersen & Company

Consultant. Designed, programmed and installed management information systems. Participated in redesign/conversion of New York State's accounting system. Developed municipal bond fund management system, successfully marketed to brokers. Participated in President's Private Sector Survey on Cost Control (Grace Commission). Designed customized tracking and accounting system for shipping company.

Teaching

1989- 1992

Teaching Fellow, Yale University

Honors Econometrics
Intermediate Microeconomics
Competitive Strategies
Probability and Game Theory
Marketing Strategy
Economic Analysis

Publications

"Snapshot of Recent Trends in Asbestos Litigation: 2022 Update," (co-author), NERA Report, 2022.

"Snapshot of Recent Trends in Asbestos Litigation: 2021 Update," (co-author), NERA Report, 2021.

"The Short-Term Effect of Goodwill Impairment Announcements on Companies' Stock Prices" (co-author), *International Journal of Business, Accounting and Finance*, Volume 14, Number 2, Fall 2020.

"Snapshot of Recent Trends in Asbestos Litigation: 2020 Update," (co-author), NERA Report, 2020.

"Snapshot of Recent Trends in Asbestos Litigation: 2019 Update," (co-author), NERA Report, 2019.

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“Trends and the Economic Effect of Asbestos Bans and Decline in Asbestos Consumption and Production Worldwide,” (co-author), *International Journal of Environmental Research and Public Health*, 15(3), 531, 2018.

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“Snapshot of Recent Trends in Asbestos Litigation: 2014 Update,” (co-author), NERA Report, 2014.

“Snapshot of Recent Trends in Asbestos Litigation: 2013 Update,” (co-author), NERA Report, 2013.

“Asbestos Payments per Resolved Claim Increased 75% in the Past Year – Is This Increase as Dramatic as it Sounds? Snapshot of Recent Trends in Asbestos Litigation: 2012 Update,” (co-author), NERA Report, 2012.

“Snapshot of Recent Trends in Asbestos Litigation: 2011 Update,” (co-author), NERA White Paper, 2011.

“Snapshot of Recent Trends in Asbestos Litigation: 2010 Update,” (co-author), NERA White Paper, 2010.

“Settlement Trends and Tactics” presented at Securities Litigation During the Financial Crisis: Current Development & Strategies, hosted by the New York City Bar, New York, New York, 2009.

“Snapshot of Recent Trends in Asbestos Litigation,” (co-author), NERA White Paper, 2009.

“China Product Recalls: What’s at Stake and What’s Next,” (co-author), NERA Working Paper, 2008.

“Forecasting Product Liability by Understanding the Driving Forces,” (co-author), *The International Comparative Legal Guide to Product Liability*, 2006.

“Securities Litigation Reform: Problems and Progress,” *Viewpoint*, November 1999, Issue No. 2 (co-authored).

“Trends in Securities Litigation and the Impact of the PSLRA,” Class Actions & Derivative Suits, American Bar Association Litigation Section, Vol. 9, No. 3, Summer 1999 (co-authored).

“Random Taxes, Random Claims,” Regulation, Winter 1997, pp. 6-7 (co-authored).

Depositions & Testimony (4 years)

Deposition Testimony before the United States District Court for the Central District of California in *In re Prime Healthcare ERISA Litigation*, 2023.

Deposition Testimony before the United States District Court for the Southern District of Texas in *Delaware County Employees Retirement System v. Cabot Oil & Gas Corporation, et al.*, 2023.

Testimony and Deposition before the United States District Court for the District of Oregon in *Oregon Firearms Federation, Inc. et al. v. Tina Kotek et al.*, 2023.

Testimony and Depositions before the United States District Court for the Southern District of Texas, Houston Division in *Miriam Edwards, et al. v. McDermott International, Inc., et al.*, 2023.

Deposition Testimony before the United States District Court for the District of Harris County, Texas in *Boxer Property Management Corp. et al. v. Illinois Union Ins. Co. et al.*, 2022.

Testimony before the Supreme Court of the State of New York, County of New York, in *MUFG Union Bank, N.A. (f/k/a Union Bank, N.A.) v. Axos Bank (f/k/a Bank of Internet USA), et al.*, 2022.

Deposition Testimony before the United States District Court for the Eastern District of Virginia, in *Plymouth County Retirement System, et al. v. Evolent Health, Inc., et al.*, 2022.

Deposition Testimony before the United States District Court for the Northern District of Georgia, in *Public Employees' Retirement System of Mississippi v. Mohawk Industries, Inc., et al.*, 2022.

Deposition Testimony before the United States District Court for the Southern District of New York, in *SEC v. AT&T, Inc. et al.*, 2022.

Deposition Testimony before the Superior Court of New Jersey, Hudson County, in *Oklahoma Firefighters Pension and Retirement System vs. Newell Brands Inc., et al.*, 2022.

Deposition Testimony before the United States District Court for the District of Pennsylvania, in *Allegheny County Employees, et al. v. Energy Transfer LP., et al.*, 2022.

Deposition Testimony before the United States District Court, District of Tennessee, in *St. Clair County Employees' Retirement System v. Smith & Acadia Healthcare Company, Inc., et al.*, 2022.

Deposition Testimony before the United States District Court, District of Colorado, in *Cipriano Correa, et al. v. Liberty Oilfield Services Inc., et al.*, 2022.

Deposition Testimony before the Superior Court of New Jersey, Hudson County, in *Oklahoma Firefighters Pension and Retirement System vs. Newell Brands Inc., et al.*, 2021.

Deposition Testimony before the Superior Court of New Jersey, Middlesex County, in *Dana Transport, Inc. et al., vs. PNC Bank et al.*, 2021.

Deposition Testimony before the United States District Court, Western District of North Carolina, in *Cheyenne Jones and Sara J. Gast v. Coca-Cola Consolidated Inc., et al.*, 2021.

Testimony and Deposition Testimony before the Court of Chancery of the State of Delaware in *Bardy Diagnostics Inc. v. Hill-Rom, Inc. et al.*, 2021.

Deposition Testimony before the United States Bankruptcy Court, Southern District of Texas, Houston Division, in *Natixis Funding Corporation v. Genon Mid-Atlantic, LLC*, 2021.

Testimony and Deposition Testimony before the United States District Court, Southern District of California, in *Miller et al. v. Becerra et al.*, 2021.

Deposition Testimony before the Court of Chancery of the State of Delaware in *Arkansas Teacher Retirement System v. Alon USA Energy, Inc., et al.*, 2021.

Deposition Testimony before the United States District Court, Western District of Oklahoma, in *Kathleen J. Myers v. Administrative Committee, Seventy Seven Energy, Inc. Retirement & Savings Plan, et al.*, 2020.

Deposition Testimony before the United States District Court, Middle District of Tennessee, in *Nikki Bollinger Grae v. Corrections Corporation of America, et al.*, 2020.

Deposition Testimony before the Supreme Court of the State of New York, County of New York, in *MUFG Union Bank, N.A. (f/k/a Union Bank, N.A.) v. Axos Bank (f/k/a Bank of Internet USA), et al.*, 2020.

Deposition Testimony before the United States District Court, Western District of Washington at Seattle, in *In re Zillow Group, Inc. Securities Litigation*, 2020.

Deposition Testimony before the United States District Court, Middle District of Tennessee, in *Zwick Partners LP and Aparna Rao v. Quorum Health Corporation*, 2019.

Testimony and Declaration before the United States District Court, Southern District of Iowa, in *Mahaska Bottling Company, Inc., et al. v. PepsiCo, Inc. and Bottling Group, LLC*, 2019.

Testimony before the United States District Court, Southern District of New York, in *Chicago Bridge & Iron Company N.V. Securities Litigation*, 2019.

Deposition Testimony before the United States District Court, Middle District of Florida, in *Jacob J. Beckel v. Fagron Holdings USA, LLC et al.*, 2019.

Exhibit B
Public Mass Shootings Data
1982 – Oct. 2022

Case and Location	Date	Source	Large Capacity Mag.? ^a	Assault Weapon? ^b	Fatalities ^c	Injuries ^c	Total Fatalities & Injuries ^c	Shots Fired ^d	Gun(s) Obtained Legally? ^e	Offender(s) ^f Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Raleigh spree shooting Heddingham, NC	10/13/22	MJ	-	-	5	2	7	-	-	2
2. Highland Park July 4 parade shooting Highland Park, IL	7/4/22	MJ	Yes	-	7	48	55	83 ^{ba}	Yes	1
3. Tulsa medical center shooting Tulsa, OK	6/1/22	MJ	-	-	4	9 ^{bb}	13 ^{bb}	37 ^{bc}	Yes	2
4. Robb Elementary School massacre Uvalde, TX	5/24/22	MJ	Yes	Yes	21	17	38	164 ^{bd}	Yes	1 ^{be}
5. Buffalo supermarket massacre Buffalo, NY	5/14/22	MJ/VP	Yes	Yes	10	3	13	60 ^{bf}	Yes	1
6. Sacramento County church shooting Sacramento, CA	2/28/22	MJ	Yes	-	4	0	4	-	Yes ^{bg}	1
7. Oxford High School shooting Oxford, MI	11/30/21	MJ/VP	Yes	No	4	7	11	30 ^{bh}	Yes ^{bi}	1
8. San Jose VTA shooting San Jose, CA	5/26/21	MJ/VP	Yes	No	9	0	9	39 ^{bj}	Yes ^{bk}	3
9. Canterbury Mobile Home Park shooting Colorado Springs, CO	5/9/21	WaPo	Yes	-	6	0	6	17 ^{bl}	-	1
10. FedEx warehouse shooting Indianapolis, IN	4/15/21	MJ/VP/WaPo	Yes	Yes	8	7	15	-	Yes	2 ^{bm}
11. Orange office complex shooting Orange, CA	3/31/21	MJ/VP/WaPo	-	-	4	1	5	-	-	1
12. Essex Royal Farms shooting Baltimore County, MD	3/28/21	WaPo	-	-	4	1	5	-	Yes ^{bn}	1
13. King Soopers supermarket shooting Boulder, CO	3/22/21	MJ/VP/WaPo	Yes	Yes	10	0	10	-	Yes	2

Exhibit B
Public Mass Shootings Data
1982 – Oct. 2022

Case and Location	Date	Source	Large Capacity Mag.? ^a	Assault Weapon? ^b	Fatalities ^c	Injuries ^c	Total Fatalities & Injuries ^c	Shots Fired ^d	Gun(s) Obtained Legally? ^e	Offender(s) ^f Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
14. Atlanta massage parlor shootings Atlanta, GA	3/16/21	MJ/VP/WaPo	Yes	-	8	1	9	-	Yes ^{bo}	1
15. Hyde Park shooting Chicago, IL	1/9/21	WaPo	-	-	5	2	7	-	-	1
16. Englewood block party shooting Chicago, IL	7/4/20	WaPo	-	-	4	4	8	-	-	-
17. Springfield convenience store shooting Springfield, MO	3/15/20	MJ/VP/WaPo	-	-	4	2	6	-	Yes ^{bp}	2
18. Molson Coors shooting Milwaukee, WI	2/26/20	MJ/VP/WaPo	-	-	5	0	5	12 ^{bq}	-	2 ^{br}
19. Jersey City Kosher Supermarket Jersey City, NJ	12/10/19	MJ/VP/WaPo	-	No	4	3	7	-	Yes	5
20. Football-watching party Fresno, CA	11/17/19	WaPo	-	No	4	6	10	-	-	2
21. Halloween Party Orinda, CA	11/1/19	WaPo	-	-	5	0	5	-	-	1
22. Tequila KC bar Kansas City, KS	10/6/19	WaPo	-	No	4	5	9	-	No	2
23. Midland-Odessa Highways Odessa, TX	8/31/19	MJ/VP/WaPo	-	Yes	7	25	32	-	No	1
24. Dayton Dayton, OH	8/4/19	MJ/VP/WaPo	Yes	Yes	9	27	36	41 ^f	Yes	1/2
25. El Paso Walmart El Paso, TX	8/3/19	MJ/VP/WaPo	Yes	Yes	22	26	48	-	Yes	1
26. Casa Grande Senior Mobile Estates Santa Maria, CA	6/19/19	WaPo	-	-	4	0	4	-	-	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
27. Virginia Beach Municipal Center Virginia Beach, VA	5/31/19	MJ/VP/WaPo	Yes	No	12	4	16	-	Yes	2
28. Henry Pratt Co. Aurora, IL	2/15/19	MJ/VP/WaPo	-	No	5	6	11	-	No	1
29. SunTrust Bank Sebring, FL	1/23/19	MJ/VP/WaPo	-	No	5	0	5	-	Yes	1
30. Borderline Bar & Grill Thousand Oaks, CA	11/7/18	MJ/VP/WaPo	Yes	No	12	1	13	50 ^g	Yes	1
31. Tree of Life Synagogue Pittsburgh, PA	10/27/18	MJ/VP/WaPo	-	Yes	11	6	17	-	Yes	4
32. T&T Trucking Bakersfield, CA	9/12/18	MJ/VP/WaPo	No	No	5	0	5	-	-	1
33. Capital Gazette Annapolis, MD	6/28/18	MJ/VP/WaPo	-	No	5	2	7	-	Yes	1
34. Santa Fe High School Santa Fe, TX	5/18/18	MJ/VP/WaPo	No	No	10	13	23	-	-	2
35. Waffle House Nashville, TN	4/22/18	MJ/VP/WaPo	-	Yes	4	4	8	-	Yes	1
36. Detroit Detroit, MI	2/26/18	VP	-	No	4	0	4	-	-	-
37. Stoneman Douglas HS Parkland, FL	2/14/18	CC/MJ/VP/WaPo	Yes	No	17	17	34	-	Yes	1
38. Pennsylvania Carwash Melcroft, PA	1/28/18	MJ/VP/WaPo	-	-	4	1	5	-	-	3 ^h
39. Rancho Tehama Rancho Tehama, CA	11/14/17	MJ/VP/WaPo	Yes	Yes	4	10	14	30 ⁱ	No	2

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
40. Texas First Baptist Church Sutherland Springs, TX	11/5/17	CC/MJ/VP/WaPo	Yes	Yes	26	20	46	450 ^j	Yes	1
41. Las Vegas Strip Las Vegas, NV	10/1/17	CC/MJ/VP/WaPo	Yes	Yes	58	422	480	1100 ^k	Yes	23
42. Taos and Rio Arriba counties Abiquiu, NM	6/15/17	WaPo	No	No	5	0	5	-	-	1
43. Fiamma Workplace Orlando, FL	6/5/17	CC/MJ/VP/WaPo	No	No	5	0	5	-	-	1
44. Marathon Savings Bank Rothschild, WI	3/22/17	VP/WaPo	-	No	4	0	4	-	-	2
45. Club 66 Yazoo City, MS	2/6/17	VP/WaPo	-	-	4	0	4	-	-	1
46. Fort Lauderdale Airport Fort Lauderdale, FL	1/6/17	CC/MJ/VP/WaPo	No	No	5	6	11	15 ^l	Yes	1
47. Cascade Mall Burlington, WA	9/23/16	CC/MJ/VP/WaPo	Yes	No	5	0	5	-	-	1
48. Dallas Police Dallas, TX	7/7/16	CC/MJ/VP/WaPo	Yes	Yes	5	11	16	-	Yes	3
49. Walgreens Parking Lot Las Vegas, NV	6/29/16	WaPo	-	-	4	0	4	-	-	1
50. Orlando Nightclub Orlando, FL	6/12/16	CC/MJ/VP/WaPo	Yes	Yes	49	53	102	110 ^m	Yes	2
51. Franklin Avenue Cookout Wilksburg, PA	3/9/16	VP/WaPo	Yes	Yes	6	3	9	48 ⁿ	No	2
52. Kalamazoo Kalamazoo County, MI	2/20/16	MJ/VP/WaPo	Yes	No	6	2	8	-	Yes	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
53. San Bernardino San Bernardino, CA	12/2/15	CC/MJ/VP/WaPo	Yes	Yes	14	22	36	150 °	Yes	4
54. Tennessee Colony campsite Anderson County, TX	11/15/15	VP/WaPo	-	-	6	0	6	-	-	1
55. Umpqua Community College Roseburg, OR	10/1/15	CC/MJ/VP/WaPo	-	No	9	9	18	-	Yes	6
56. Chattanooga Military Center Chattanooga, TN	7/16/15	CC/MJ/VP/WaPo	Yes	Yes	5	2	7	-	Yes	3
57. Charleston Church Charleston, SC	6/17/15	CC/MJ/VP/WaPo	Yes	No	9	3	12	-	Yes	1
58. Marysville High School Marysville, WA	10/24/14	CC/MJ/VP/WaPo	Yes	No	4	1	5	-	No	1
59. Isla Vista Santa Barbara, CA	5/23/14	MJ/VP/WaPo	No	No	6	13	19	50 ^p	Yes	3
60. Alturas Tribal Alturas, CA	2/20/14	MJ/VP/WaPo	-	No	4	2	6	-	-	2
61. Washington Navy Yard Washington, D.C.	9/16/13	CC/MJ/VP/WaPo	No	No	12	8	20	-	Yes	2
62. Hialeah Hialeah, FL	7/26/13	CC/MJ/VP/WaPo	Yes	No	6	0	6	10 ^q	Yes	1
63. Santa Monica Santa Monica, CA	6/7/13	CC/MJ/VP/WaPo	Yes	Yes	5	3	8	70 ^r	Yes	2
64. Federal Way Federal Way, WA	4/21/13	MJ/VP/WaPo	-	No	4	0	4	-	Yes	2
65. Upstate New York Herkimer County, NY	3/13/13	MJ/VP/WaPo	-	No	4	2	6	-	Yes	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
66. Newtown School Newtown, CT	12/14/12	CC/MJ/VP/WaPo	Yes	Yes	27	2	29	154	No	4/3
67. Accent Signage Systems Minneapolis, MN	9/27/12	CC/MJ/VP/WaPo	Yes	No	6	2	8	46	Yes	1
68. Sikh Temple Oak Creek, WI	8/5/12	CC/MJ/VP/WaPo	Yes	No	6	4	10	-	Yes	1
69. Aurora Movie Theater Aurora, CO	7/20/12	CC/MJ/VP/WaPo	Yes	Yes	12	70	82	80	Yes	4
70. Seattle Café Seattle, WA	5/30/12	CC/MJ/VP/WaPo	No	No	5	1	6	-	Yes	2
71. Oikos University Oakland, CA	4/2/12	CC/MJ/VP/WaPo	No	No	7	3	10	-	Yes	1
72. Su Jung Health Sauna Norcross, GA	2/22/12	MJ/WaPo	-	No	4	0	4	-	Yes	1
73. Seal Beach Seal Beach, CA	10/14/11	CC/MJ/VP/WaPo	No	No	8	1	9	-	Yes	3
74. IHOP Carson City, NV	9/6/11	CC/MJ/VP/WaPo	Yes	Yes	4	7	11	-	Yes	3
75. Akron Akron, OH	8/7/11	VP	No	No	7	2	9	21 ^s	-	-
76. Forum Roller World Grand Prairie, TX	7/23/11	WaPo	-	No	5	4	9	-	-	1
77. Grand Rapids Grand Rapids, MI	7/7/11	CC	Yes	No	7	2	9	10	-	1
78. Family law practice Yuma, AZ	6/2/11	WaPo	-	-	5	1	6	-	-	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
79. Tucson Tucson, AZ	1/8/11	CC/MJ/VP/WaPo	Yes	No	6	13	19	33	Yes	1
80. Jackson Jackson, KY	9/11/10	VP	No	No	5	0	5	12 ^t	-	-
81. City Grill Buffalo, NY	8/14/10	VP/WaPo	-	No	4	4	8	10 ^u	-	1
82. Hartford Beer Distributor Manchester, CT	8/3/10	CC/MJ/VP/WaPo	Yes	No	8	2	10	11	Yes	2
83. Yoyito Café Hialeah, FL	6/6/10	CC/VP/WaPo	No	No	4	3	7	9 ^v	-	-
84. Hot Spot Café Los Angeles, CA	4/3/10	VP/WaPo	-	No	4	2	6	50 ^w	-	1
85. Coffee Shop Police Parkland, WA	11/29/09	CC/MJ/VP/WaPo	No	No	4	0	4	-	No	2
86. Fort Hood Fort Hood, TX	11/5/09	CC/MJ/VP/WaPo	Yes	No	13	32	45	214	Yes	1
87. Worth Street Mount Airy, NC	11/1/09	VP/WaPo	-	Yes	4	0	4	16 ^x	No	1
88. Binghamton Binghamton, NY	4/3/09	CC/MJ/VP/WaPo	Yes	No	13	4	17	99	Yes	2
89. Carthage Nursing Home Carthage, NC	3/29/09	CC/MJ/VP/WaPo	No	No	8	2	10	-	Yes	2
90. Skagit County Alger, WA	9/2/08	VP/WaPo	-	No	6	4	10	-	No	2
91. Atlantis Plastics Henderson, KY	6/25/08	CC/MJ/VP/WaPo	No	No	5	1	6	-	Yes	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
92. Black Road Auto Santa Maria, CA	3/18/08	VP/WaPo	-	No	4	0	4	17 ^y	-	1
93. Northern Illinois University DeKalb, IL	2/14/08	CC/MJ/VP/WaPo	Yes	No	5	21	26	54	Yes	4
94. Kirkwood City Council Kirkwood, MO	2/7/08	CC/MJ/VP/WaPo	No	No	6	1	7	-	No	2
95. Youth With a Mission and New Life Church	12/9/07	VP/WaPo	Yes	Yes	4	5	9	25 ^z	-	3
96. Westroads Mall Omaha, NE	12/5/07	CC/MJ/VP/WaPo	Yes	Yes	8	5	13	14	No	1
97. Crandon Crandon, WI	10/7/07	CC/MJ/WaPo	Yes	-	6	1	7	30 ^{aa}	Yes	1
98. Virginia Tech Blacksburg, VA	4/16/07	CC/MJ/VP/WaPo	Yes	No	32	17	49	176	Yes	2
99. Trolley Square Salt Lake City, UT	2/12/07	CC/MJ/VP/WaPo	No	No	5	4	9	-	No	2
100. Amish School Lancaster County, PA	10/2/06	CC/MJ/VP/WaPo	No	No	5	5	10	-	Yes	3
101. The Ministry of Jesus Christ Baton Rouge, LA	5/21/06	VP/WaPo	-	No	5	1	6	-	-	1
102. Capitol Hill Seattle, WA	3/25/06	CC/MJ/VP/WaPo	Yes	Yes	6	2	8	-	Yes	4
103. Goleta Postal Goleta, CA	1/30/06	CC/MJ/VP/WaPo	Yes	No	7	0	7	-	Yes	1
104. Sash Assembly of God Sash, TX	8/29/05	VP/WaPo	-	No	4	0	4	-	-	2

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
105. Red Lake Red Lake, MN	3/21/05	CC/MJ/VP/WaPo	No	No	9	7	16	-	No	3
106. Living Church of God Brookfield, WI	3/12/05	CC/MJ/VP/WaPo	Yes	No	7	4	11	-	Yes	1
107. Fulton County Courthouse Atlanta, GA	3/11/05	VP/WaPo	-	No	4	0	4	-	No	1
108. Damageplan Show Columbus, OH	12/8/04	CC/MJ/VP/WaPo	No	No	4	3	7	15 ^{ab}	Yes	1
109. Hunting Camp Meteor, WI	11/21/04	CC/VP/WaPo	Yes	Yes	6	2	8	20	-	1
110. ConAgra Foods Plant Kansas City, KS	7/3/04	VP/WaPo	-	No	6	1	7	10 ^{ac}	-	2
111. Stateline Tavern Oldtown, ID	10/24/03	VP/WaPo	Yes	No	4	0	4	14 ^{ad}	-	1
112. Windy City Warehouse Chicago, IL	8/27/03	CC/VP/WaPo	No	No	6	0	6	-	-	-
113. Lockheed Martin Meridian, MS	7/8/03	CC/MJ/VP/WaPo	-	No	6	8	14	-	Yes	5
114. Labor Ready Huntsville, AL	2/25/03	VP/WaPo	-	No	4	1	5	-	-	1
115. Bertrand Products South Bend, IN	3/22/02	VP/WaPo	-	No	4	2	6	-	-	2
116. Burns International Security Sacramento, CA	9/10/01	VP/WaPo	Yes	Yes	5	2	7	200 ^{ae}	-	2
117. Bookcliff RV Park Rifle, CO	7/3/01	VP/WaPo	No	No	4	3	7	6 ^{af}	-	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
118. Navistar Melrose Park, IL	2/5/01	CC/MJ/VP/WaPo	Yes	No	4	4	8	-	Yes	4
119. Houston Houston, TX	1/9/01	VP	-	No	4	0	4	-	-	-
120. Wakefield Wakefield, MA	12/26/00	CC/MJ/VP/WaPo	Yes	-	7	0	7	37	Yes	3
121. Mount Lebanon Pittsburgh, PA	4/28/00	VP/WaPo	No	No	5	1	6	-	Yes	1
122. Mi-T-Fine Car Wash Irving, TX	3/20/00	VP/WaPo	-	No	5	1	6	-	-	-
123. Hotel Tampa, FL	12/30/99	CC/MJ/VP/WaPo	No	No	5	3	8	-	Yes	2
124. Xerox Honolulu, HI	11/2/99	CC/MJ/VP/WaPo	Yes	No	7	0	7	28	Yes	1
125. Wedgwood Baptist Church Fort Worth, TX	9/15/99	CC/MJ/VP/WaPo	Yes	No	7	7	14	30	Yes	2
126. Atlanta Day Trading Atlanta, GA	7/29/99	MJ/VP/WaPo	-	No	9	13	22	-	Yes	4
127. Albertson's Supermarket Las Vegas, NV	6/3/99	VP/WaPo	-	No	4	1	5	-	-	1
128. Columbine High School Littleton, CO	4/20/99	CC/MJ/VP/WaPo	Yes	Yes	13	23	36	188	No	4
129. St. John Fellowship Baptist Church Gonzalez, LA	3/10/99	VP/WaPo	-	No	4	4	8	-	-	1
130. Thurston High School Springfield, OR	5/21/98	CC/MJ/VP/WaPo	Yes	No	4	25	29	50	No	3

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
131. Westside Middle School Jonesboro, AR	3/24/98	CC/MJ/VP/WaPo	Yes	No	5	10	15	26	No	9/10
132. Connecticut Lottery Newington, CT	3/6/98	CC/MJ/VP/WaPo	Yes	No	4	0	4	5	Yes	1
133. Caltrans Maintenance Yard Orange, CA	12/18/97	CC/MJ/VP/WaPo	Yes	Yes	4	2	6	144	Yes	1
134. Erie Manufacturing Bartow, FL	12/3/97	VP	-	No	4	0	4	12 ^{ag}	-	-
135. R.E. Phelon Company Aiken, SC	9/15/97	CC/MJ/VP/WaPo	No	No	4	3	7	-	No	1
136. News and Sentinel Colebrook, NH	8/20/97	VP/WaPo	-	Yes	4	4	8	-	-	2
137. Fire Station Jackson, MS	4/25/96	VP/WaPo	-	No	5	3	8	-	-	3
138. Fort Lauderdale Fort Lauderdale, FL	2/9/96	CC/MJ/VP/WaPo	No	No	5	1	6	14 ^{ah}	Yes	2
139. Little Chester Shoes New York, NY	12/19/95	VP/WaPo	Yes	No	5	3	8	-	-	1
140. Piper Technical Center Los Angeles, CA	7/19/95	CC/VP/WaPo	Yes	No	4	0	4	-	-	-
141. Walter Rossler Company Corpus Christi, TX	4/3/95	CC/MJ/VP/WaPo	No	No	5	0	5	-	Yes	2
142. Puppy creek Hoke County, NC	12/31/94	VP	-	-	5	1	6	-	-	-
143. Air Force Base Fairchild Base, WA	6/20/94	CC/MJ/VP/WaPo	Yes	Yes	4	23	27	50 ^{ai}	Yes	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
144. Chuck E. Cheese Aurora, CO	12/14/93	CC/MJ/VP/WaPo	No	No	4	1	5	-	-	1
145. Long Island Railroad Garden City, NY	12/7/93	CC/MJ/VP/WaPo	Yes	No	6	19	25	30	Yes	1
146. Unemployment Office Oxnard, CA	12/2/93	VP/WaPo	-	-	4	4	8	-	-	-
147. Family Fitness Club El Cajon, CA	10/14/93	VP/WaPo	-	No	4	0	4	-	Yes	1
148. Luigi's Restaurant Fayetteville, NC	8/6/93	CC/MJ/VP/WaPo	No	No	4	8	12	-	Yes	3
149. Washington County Bar Jackson, MS	7/8/93	WaPo	-	-	5	0	5	-	-	1
150. 101 California Street San Francisco, CA	7/1/93	CC/MJ/VP/WaPo	Yes	Yes	8	6	14	75	No	3
151. Card club Paso Robles, CA	11/8/92	VP/WaPo	-	No	6	1	7	-	-	1
152. Watkins Glen Watkins Glen, NY	10/15/92	CC/MJ/VP/WaPo	No	No	4	0	4	-	Yes	1
153. Lindhurst High School Olivehurst, CA	5/1/92	CC/MJ/VP/WaPo	No	No	4	10	14	-	Yes	2
154. Phoenix Phoenix, AZ	3/15/92	VP	-	-	4	0	4	-	-	-
155. Royal Oak Postal Royal Oak, MI	11/14/91	CC/MJ/VP/WaPo	Yes	No	4	4	8	-	Yes	1
156. Restaurant Harrodsburg, KY	11/10/91	VP/WaPo	No	No	4	0	4	6 ^{aj}	No	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
157. University of Iowa Iowa City, IA	11/1/91	CC/MJ/VP/WaPo	No	No	5	1	6	-	Yes	1
158. Luby's Cafeteria Killeen, TX	10/16/91	CC/MJ/VP/WaPo	Yes	No	23	20	43	100	Yes	2
159. Post office Ridgewood, NJ	10/10/91	VP/WaPo	Yes	Yes	4	0	4	-	-	2
160. GMAC Jacksonville, FL	6/18/90	CC/MJ/VP/WaPo	Yes	No	9	4	13	14	Yes	2
161. Standard Gravure Corporation Louisville, KY	9/14/89	CC/MJ/VP/WaPo	Yes	Yes	8	12	20	21	Yes	5
162. Stockton Schoolyard Stockton, CA	1/17/89	CC/MJ/VP/WaPo	Yes	Yes	5	29	34	106	Yes	2
163. Montefiore School Chicago, IL	9/22/88	VP/WaPo	No	No	4	2	6	-	-	1
164. Old Salisbury Road Winston-Salem, NC	7/17/88	VP/WaPo	-	No	4	5	9	-	-	1
165. ESL Sunnyvale, CA	2/16/88	CC/MJ/VP/WaPo	No	No	7	4	11	-	Yes	7
166. Shopping Centers Palm Bay, FL	4/23/87	CC/MJ/VP/WaPo	Yes	No	6	14	20	40 ^{ak}	Yes	3
167. United States Postal Service Edmond, OK	8/20/86	CC/MJ/VP/WaPo	No	-	14	6	20	-	Yes	3
168. Anchor Glass Container Corporation South Connellsville, PA	3/16/85	VP/WaPo	No	No	4	1	5	-	-	1
169. Other Place Lounge Hot Springs, AR	7/24/84	VP/WaPo	No	No	4	1	5	-	-	1

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
170. San Ysidro McDonald's San Ysidro, CA	7/18/84	CC/MJ/VP/WaPo	Yes	Yes	21	19	40	257	Yes	3
171. Dallas Nightclub Dallas, TX	6/29/84	CC/MJ/VP/WaPo	Yes	No	6	1	7	-	No	1
172. Alaska Mining Town Manley Hot Springs, AK	5/17/84	VP/WaPo	No	No	7	0	7	-	-	1
173. College Station College Station, TX	10/11/83	VP	-	No	6	0	6	-	-	-
174. Alaska Back-County McCarthy, AK	3/1/83	VP/WaPo	-	No	6	2	8	-	-	2
175. Upper West Side Hotel New York, NY	2/3/83	VP	No	No	4	1	5	-	-	1
176. The Investor Noyes Island, AK	9/6/82	WaPo	-	No	8	0	8	-	-	1
177. Welding Shop Miami, FL	8/20/82	MJ/VP/WaPo	No	No	8	3	11	-	Yes	1
178. Western Transfer Co. Grand Prairie, TX	8/9/82	VP/WaPo	-	No	6	4	10	-	-	3
179. Russian Jack Springs Park Anchorage, AK	5/3/82	VP/WaPo	-	No	4	0	4	-	No	1

Total: 1,272 1,417 2,689

Large-Capacity Magazine Average: 10 16 25 99

Non-Large-Capacity Magazine Average: 6 3 9 16

Assault Weapon Average: 12 24 36 149

Non-Assault Weapon Average: 6 4 10 38

Exhibit B
Public Mass Shootings Data
1982 – Oct. 2022

Case and Location	Date	Source	Large Capacity Mag. ^a	Assault Weapon? ^b	Fatalities ^c	Injuries ^c	Total Fatalities & Injuries ^c	Shots Fired ^d	Gun(s) Obtained Legally? ^e	Offender(s) Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

Notes and Sources:

Public Mass Shootings from Mother Jones ("US Mass Shootings, 1982-2022: Data from Mother Jones' Investigation," updated October 14, 2022). MJ indicates a mass shooting identified by Mother Jones.

The Citizens Crime Commission of New York City ("Mayhem Multiplied: Mass Shooters and Assault Weapons," February 2018 update, and "Citizens Crime Commission of New York City, Mass Shooting Incidents in America (1984-2012)," accessed June 1, 2017). CC indicates a mass shooting identified by Citizens Crime Commission of New York City data.

The Washington Post ("The Terrible Numbers That Grow With Each Mass Shooting," updated May 12, 2021). WaPo indicates a mass shooting identified by The Washington Post.

The Violence Project ("Mass Shooter Database," updated May 14, 2022). VP indicates a mass shooting identified by the Violence Project.

^a Large capacity magazines are those with a capacity to hold more than 10 rounds of ammunition. Stories from Factiva and Google searches reviewed to determine whether an LCM was involved.

^b See Exhibit C for details.

^c Offender(s) are not included in counts of fatalities and injuries. Stories from Factiva and Google searches reviewed to determine number of fatalities and injuries.

^d Except where noted, all data on shots fired obtained from CC.

^e The determination of whether guns were obtained legally is based on Mother Jones and The Washington Post reporting.

^{ba} "This is the norm in our country': Highland Park Mayor speaks to Senate committee about gun violence," *CBS Chicago*, July 20, 2022.

^{bb} MJ reported "fewer than 10" injuries for this incident.

^{bc} "Update: Man among those killed held door to allow others to escape, Tulsa police chief says," *TulsaWorld*, June 2, 2022.

Exhibit B
Public Mass Shootings Data
1982 – Oct. 2022

Case and Location	Date	Source	Large Capacity Mag. ^a	Assault Weapon? ^b	Fatalities ^c	Injuries ^c	Total Fatalities & Injuries ^c	Shots Fired ^d	Gun(s) Obtained Legally? ^e	Offender(s) Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

bd "The gunman in Uvalde carried more ammunition into Robb Elementary School than a U.S. soldier carries into combat," *CBS News*, May 27, 2022. Note the number of shots fired has been updated since Allen 2022 in Duncan v. Rob Bonta which listed 315 shots fired based on the number of rounds found at the school.

be "Uvalde gunman legally bought AR rifles days before shooting, law enforcement says," *The Texas Tribune*, May 25, 2022.

bf "Buffalo shooting suspect says his motive was to prevent 'eliminating the white race'," *NPR*, June 16, 2022.

bg "Sacramento Church Mass Shooting Follows Disturbing Trend of Domestic Violence, Mass Shooting Connection; Rise of Ghost Guns," *Everytown*, March 7, 2022.

bh "Oxford High School shooter fired 30 rounds, had 18 more when arrested, sheriff says," *Fox2Detroit*, December 1, 2021.

bi "Father of suspected Oxford High School shooter bought gun 4 days before shooting," *Fox 2 Detroit*, December 1, 2021.

bj "VTA shooter fired 39 rounds during attack; carried 32 high-capacity magazines," *KTVU Fox 2*, May 27, 2021.

bk "Sam Cassidy legally owned guns used in San Jose VTA shooting: Sheriff," *Kron4*, May 28, 2021.

bl "Colorado Springs shooter who killed 6 at party had "displayed power and control issues," police say," *The Denver Post*, May 11, 2021.

bm "Indianapolis FedEx Shooter Who Killed 4 Sikhs Was Not Racially Motivated, Police Say," *NPR*, July 28, 2021.

bn "Police Investigate Three Separate Fatal Shooting Incidents In Baltimore County," *Baltimore County Government Website*, March 29, 2021.

bo "Atlanta Shooting Suspect Bought Gun on Day of Rampage," *Courthouse News*, March 26, 2021.

bp "Search warrant reveals new information in Springfield Kum & Go shooting," *Springfield News-Leader*, April 8, 2020.

bq "There was no warning this was going to happen,' Miller shooting witnesses told investigators," *WISN 12 News*, November 24, 2020.

br "Milwaukee Miller brewery shooting: Six Molson Coors workers, including shooter, dead in rampage," *Milwaukee Journal Sentinel*, February 26, 2020.

f "The Dayton gunman killed 9 people by firing 41 shots in 30 seconds. A high-capacity rifle helped enable that speed," *CNN*, August 5, 2019.

Exhibit B
Public Mass Shootings Data
1982 – Oct. 2022

Case and Location	Date	Source	Large	Assault	Fatalities ^c	Injuries ^c	Total	Shots Fired ^d	Gun(s)	Offender(s)'
			Capacity Mag.? ^a	Weapon? ^b			Fatalities & Injuries ^c		Obtained Legally? ^e	Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

^g "Authorities Describe 'Confusion And Chaos' At Borderline Bar Shooting In California," *NPR*, November 28, 2018.

^h "Suspect in quadruple killing at car wash dies," *CNN*, January 30, 2018.

ⁱ "California gunman fired 30 rounds at elementary school, left when he couldn't get inside," *ABC News*, November 15, 2017.

^j "Be quiet! It's him!" Survivors say shooter walked pew by pew looking for people to shoot," *CNN*, November 9, 2017.

^k "Sheriff Says More than 1,100 Rounds Fired in Las Vegas," *Las Vegas Review Journal*, November 22, 2017

^l "Fort Lauderdale Shooting Suspect Appears in Court, Ordered Held Without Bond," *Washington Post*, January 9, 2017.

^m "'We Thought It Was Part of the Music': How the Pulse Nightclub Massacre Unfolded in Orlando," *The Telegraph*, June 13, 2016.

ⁿ "Two men charged with homicide in connection with Wilkinsburg backyard ambush," *Pittsburgh's Action News*, June 24, 2016.

^o "San Bernardino Suspects Left Trail of Clues, but No Clear Motive," *New York Times*, December 3, 2015.

^p "Sheriff: Elliot Rodger Fired 50-plus Times in Isle Vista Rampage," *Los Angeles Times*, June 4, 2014.

^q "Shooter Set \$10,000 on Fire in Hialeah Shooting Rampage," *NBC News*, July 28, 2013.

^r "Police Call Santa Monica Gunman 'Ready for Battle,'" *New York Times*, June 8, 2013.

^s "Questions linger in slayings; investigation continues in rampage as community searches for answers on why gunman shot eight people," *The Beacon Journal*, August 14, 2011.

^t "Kentucky Tragedy: Man Kills Wife, Five Others, in Rampage Over Cold Eggs, Say Cops," *CBS News*, September 13, 2010.

^u "Ex-gang member guilty of shooting 5 in deadly 17-second rampage," *NBC*, April 1, 2011.

^v "Hialeah Gunman's Rage Over Estranged Wife Leaved 5 Dead," *Sun-Sentinel*, June 7, 2010.

Exhibit B
Public Mass Shootings Data
1982 – Oct. 2022

Case and Location	Date	Source	Large Capacity Mag.? ^a	Assault Weapon? ^b	Fatalities ^c	Injuries ^c	Total Fatalities & Injuries ^c	Shots Fired ^d	Gun(s) Obtained Legally? ^e	Offender(s) Number of Guns
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

^w "Man convicted of killing 4 at Los Angeles restaurant," *Associated Press*, March 15, 2016.

^x "4 Victims In Mount Airy Shooting Related, Police Say," *WXII 12 News*, November 2, 2009.

^y "Arrested suspect might have warned of Santa Maria shooting," *Associated Press*, March 20, 2008.

^z "Profile: New information released on Matthew Murray, gunman in church-related shootings in Colorado; Larry Bourbannais, wounded in one of the shootings, discusses his experience," NBC News, December 11, 2007.

^{aa} "Small Town Grieves for 6, and the Killer," *Los Angeles Times*, October 9, 2007.

^{ab} "National Briefing | Midwest: Ohio: Shooter At Club May Have Reloaded," *New York Times*, January 15, 2005.

^{ac} "Sixth person dies of injuries from shooting at Kansas meatpacking plant," *Associated Press*, July 3, 2004.

^{ad} "Four Killed In Oldtown Shooting," *The Miner*, October 30, 2003.

^{ae} "Sacramento shooter unscathed before killing self, autopsy shows," *Associated Press*, September 14, 2001.

^{af} "Gunman kills 3, wounds 4 in Rifle rampage; mental patient is arrested," *The Denver Post*, April 2, 2015.

^{ag} "Unfinished business," *Dateline NBC*, December 21, 2006.

^{ah} "5 Beach Workers in Florida are Slain by Ex-Colleague," *New York Times*, February 10, 1996.

^{ai} "Man Bent On Revenge Kills 4, Hurts 23 -- Psychiatrist Is First Slain In Rampage At Fairchild Air Force Base," *The Seattle Times*, June 21, 1994.

^{aj} "Man Killed Estranged Wife, Three Others as They Drove to Dinner," *Associated Press*, November 11, 1991.

^{ak} "6 Dead in Florida Sniper Siege; Police Seize Suspect in Massacre," *Chicago Tribune*, April 25, 1987.

Exhibit C

List of Firearms Used in Public Mass Shootings 1982 – Oct. 2022

Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Raleigh spree shooting	Heddingham, NC	10/13/22		shotgun, semiautomatic handgun		-
2. Highland Park July 4 parade shooting	Highland Park, IL	7/4/22		AR-15 style rifle, possibly modified for rapid fire		-
3. Tulsa medical center shooting	Tulsa, OK	6/1/22		AR-15 style rifle		-
4. Robb Elementary School massacre	Uvalde, TX	5/24/22		semiautomatic rifles		Yes ^{ca}
5. Buffalo supermarket massacre	Buffalo, NY	5/14/22		Bushmaster XM-15 semiautomatic rifle		Yes
6. Sacramento County church shooting	Sacramento, CA	2/28/22		AR-15-style "ghost gun"		-
7. Oxford High School shooting	Oxford, MI	11/30/21		Sig Sauer 9mm pistol		No ^{cb}
8. San Jose VTA shooting	San Jose, CA	5/26/21		semiautomatic handguns		No ^{cc}
9. Canterbury Mobile Home Park shooting	Colorado Springs, CO	5/9/21			Smith & Wesson handgun	-
10. FedEx warehouse shooting	Indianapolis, IN	4/15/21		semiautomatic rifle	Ruger AR 556, HM Defense HM15F Rifle	Yes ^{cd}
11. Orange office complex shooting	Orange, CA	3/31/21		semiautomatic handgun	Glock semiautomatic handgun	-
12. Essex Royal Farms shooting	Baltimore County, MD	3/28/21			-	-
13. King Soopers supermarket shooting	Boulder, CO	3/22/21		Ruger AR-556	Ruger AR 556 pistol , 9mm pistol	Yes ^{ce}
14. Atlanta massage parlor shootings	Atlanta, GA	3/16/21		semiautomatic handgun	9mm handgun	-
15. Hyde Park shooting	Chicago, IL	1/9/21			.45-caliber pistol	-
16. Englewood block party shooting	Chicago, IL	7/4/20			-	-
17. Springfield convenience store shooting	Springfield, MO	3/15/20		SKS 7.62-caliber rifle; Glock 9mm	Glock 9mm, SKS 7.62-caliber rifle	-
18. Molson Coors shooting	Milwaukee, WI	2/26/20		semiautomatic handgun	Handgun	-
19. Jersey City Kosher Supermarket	Jersey City, NJ	12/10/19	-	-	mossberg 12-gauge; .22-caliber ruger Mark IV; AR-15-style rifle; Ruger 9mm semiautomatic pistol; 9mm glock 17	No
20. Football-watching party	Fresno, CA	11/17/19	-	-	two semiautomatic handguns	No

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(1)	(2)	(3)	(4)	(5)	(6)	(7)
21. Halloween Party	Orinda, CA	11/1/19	-	-	-	-
22. Tequila KC bar	Kansas City, KS	10/6/19	-	-	Handgun	No
23. Midland-Odessa Highways	Odessa, TX	8/31/19	-	semiautomatic rifle	AR-style rifle	Yes ^e
24. Dayton	Dayton, OH	8/4/19	-	AR-15-style rifle, with a 100-round capacity ammunition drum	23 caliber anderson AM-15 pistol modified to function like an AR-15 rifle, shotgun	Yes ^{cf}
25. El Paso Walmart	El Paso, TX	8/3/19	-	AK-47-style rifle, per authorities	7.62 caliber AK-47 style rifle	Yes
26. Casa Grande Senior Mobile Estates	Santa Maria, CA	6/19/19	-	-	-	-
27. Virginia Beach Municipal Center	Virginia Beach, VA	5/31/19	-	.45-caliber handguns; noise suppressor (silencer); several high-capacity magazines	.45 caliber handgun with noise suppressor, .45 caliber handgun	No
28. Henry Pratt Co.	Aurora, IL	2/15/19	-	Smith & Wesson handgun, with a green sighting laser	.40-caliber Smith & Wesson semiautomatic handgun	No
29. SunTrust Bank	Sebring, FL	1/23/19	-	9 mm handgun	9mm semiautomatic handgun	No
30. Borderline Bar & Grill	Thousand Oaks, CA	11/7/18	-	Glock 21, .45 caliber; high-capacity magazine	Glock 21 .45-caliber handgun	No
31. Tree of Life Synagogue	Pittsburgh, PA	10/27/18	-	AR-15; Glock .357	Colt AR-15 semiautomatic rifle; three glock .357 pistols	Yes ^f
32. T&T Trucking	Bakersfield, CA	9/12/18	-	-	.50-caliber Smith & Wesson 500	No ^g
33. Capital Gazette	Annapolis, MD	6/28/18	-	12-gauge pump-action shotgun	2 gauge shotgun	No
34. Santa Fe High School	Santa Fe, TX	5/18/18	-	shotgun; .38 revolver	.38 caliber revolver, shotgun	No
35. Waffle House	Nashville, TN	4/22/18	-	AR-15	AR-15-style semiautomatic rifle	Yes ^h
36. Detroit	Detroit, MI	2/26/18	-	-	-	No
37. Stoneman Douglas HS	Parkland, FL	2/14/18	-	AR-15	.223 caliber smith & wesson M&P 15 semiautomatic ar 15 rifle	No ⁱ
38. Pennsylvania Carwash	Melcroft, PA	1/28/18	-	semiautomatic rifle and semiautomatic handgun	AR-15 .223-caliber semiautomatic rifle; 9mm handgun	- ^j
39. Rancho Tehama	Rancho Tehama, CA	11/14/17	-	Two illegally modified rifles	two semiautomatic rifles; two handguns	Yes ^k

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List of Firearms Used in Public Mass Shootings 1982 – Oct. 2022

Case	Location	Date		Weapon Description From			Assault Weapon? ^d
				Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)		(4)	(5)	(6)	(7)
40. Texas First Baptist Church	Sutherland Springs, TX	11/5/17	-		Ruger AR-556 ; Kelley also possessed semiautomatic handguns	9mm Glock pistol; Ruger .22-caliber; Ruger AR-556	Yes ^l
41. Las Vegas Strip	Las Vegas, NV	10/1/17	-		AR-15-style and AK-47-style rifles and "a large cache of ammunition"; four Daniel Defense DDM4 rifles , three FN-15s and other rifles made by Sig Sauer .	-	Yes ^m
42. Taos and Rio Arriba counties	Abiquiu, NM	6/15/17	-		-	.38 caliber revolver	No
43. Fiamma Workplace	Orlando, FL	6/5/17	-		semiautomatic handgun	semiautomatic rifle (2); handgun (2)	No
44. Marathon Savings Bank	Rothschild, WI	3/22/17	-		-	Rifle, handgun	No
45. Club 66	Yazoo City, MS	2/6/17	-		-	-	-
46. Fort Lauderdale Airport	Fort Lauderdale, FL	1/6/17	-		Walther 9mm semi-automatic pistol	9mm semiautomatic handgun	No
47. Cascade Mall	Burlington, WA	9/23/16	-		Ruger .22-caliber	Ruger .22-caliber rifle	No ⁿ
48. Dallas Police	Dallas, TX	7/7/16	-		Izhmash-Saiga 5.45mm (AK-style) semiautomatic rifle with large capacity magazines; Glock 9mm handgun, .25-caliber semiautomatic handgun	SKS-type semiautomatic rifle	Yes ^o
49. Walgreens Parking Lot	Las Vegas, NV	6/29/16	-		-	-	-
50. Orlando Nightclub	Orlando, FL	6/12/16	-		Sig Sauer MCX rifle , Glock 17 9mm; high-capacity magazines (30 rounds)	.223-caliber Sig Sauer MCX semiautomatic rifle ; 9mm semiautomatic glock 17 pistol	Yes ^p
51. Franklin Avenue Cookout	Wilkinsburg, PA	3/9/16	-		-	AK-47-style rifle , .40-caliber handgun	Yes
52. Kalamazoo	Kalamazoo County, MI	2/20/16	-		9 mm handgun (ammo used unclear)	Walther P-99 9mm semiautomatic handgun	No
53. San Bernardino	San Bernardino, CA	12/2/15	-		Two semiautomatic AR-15-style rifles—one a DPMS A-15, the other a Smith & Wesson M&P15 , both with .223 calibre ammunition. Two 9mm semiautomatic handguns. High capacity magazines.	DPMS AR-15-style rifle; Smith & Wesson M&P AR-15-style rifle ; Llama semiautomatic 9mm pistol; Smith & Wesson semiautomatic 9mm pistol	Yes ^q

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(1)	(2)	(3)	(4)	(5)	(6)	(7)
54. Tennessee Colony campsite	Anderson County, TX	11/15/15	-	-	-	-
55. Umpqua Community College	Roseburg, OR	10/1/15	-	9 mm Glock pistol, .40 caliber Smith & Wesson, .40 caliber Taurus pistol, .556 caliber Del-Ton; (ammo details unclear)	rifle; five pistols	No ^r
56. Chattanooga Military Center	Chattanooga, TN	7/16/15	-	AK-47 , AR-15, and 30-round magazines; 9mm handgun	AR-15-style semiautomatic rifle; 9mm pistol; AK-47-type semiautomatic rifle	Yes ^s
57. Charleston Church	Charleston, SC	6/17/15	-	.45-caliber Glock (model 41, with 13-round capacity magazine)	.45-caliber glock 41 pistol	No
58. Marysville High School	Marysville, WA	10/24/14	-	Beretta .40-caliber handgun	.40-caliber beretta pistol	No
59. Isla Vista	Santa Barbara, CA	5/23/14	-	Two Sig Sauer P226 semiautomatic pistols and Glock 34 pistol, and hundreds of rounds of ammo. A 6- inchand 8-inch “SRK” and “Boar Hunter” hunting knives.	Sig Sauer P226s pistol; Glock 34 pistol; Sig Sauer P226s pistol	No
60. Alturas Tribal	Alturas, CA	2/20/14	-	9mm semi-automatic handgun	Unknown	No
61. Washington Navy Yard	Washington, D.C.	9/16/13	-	Remington 870 Express 12-gauge shotgun; Beretta handgun	beretta pistol; Remington 970 Express 12-gauge shotgun	No
62. Hialeah	Hialeah, FL	7/26/13	-	Glock 17	Glock 17 pistol	No
63. Santa Monica	Santa Monica, CA	6/7/13	-	.223-caliber semi-automatic assault rifle , about 40 high capacity magazines, "black powder" handgun (likely antique)	Black powder .33-caliber handgun; AR-15 type .223-caliber semiautomatic rifle	Yes ^t
64. Federal Way	Federal Way, WA	4/21/13	-	.40 caliber semi-automatic handgun, pistol grip shotgun	.40 caliber semiautomatic pistol; pistol grip shotgun	No ^u
65. Upstate New York	Herkimer County, NY	3/13/13	-	Unknown	Unknown	No ^v

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(1)	(2)	(3)	(4)	(5)	(6)	(7)
66. Newtown School	Newtown, CT	12/14/12	An unknown make and model .22-caliber rifle, a Bushmaster XM15 .223-caliber semiautomatic assault rifle equipped with a 30-round large capacity ammunition magazine, and a GLOCK 10mm handgun were used. According to the Danbury State's Attorney, police also recovered in Lanza's possession a SIG SAUER P226 9mm handgun and three loaded 30-round large capacity ammunition magazines for the Bushmaster. Six additional 30-round large capacity ammunition magazines were recovered at the scene. A loaded unknown make and model 12-gauge shotgun was found in the passenger compartment of the car (later moved to the trunk by police). All of the guns used in the shooting were purchased by Lanza's mother.	10mm Glock, 9mm SIG Sauer P226 semiautomatic handguns; .223 Bushmaster XM15-E2S semiautomatic rifle; Izhmash Saiga-12 12-gauge semiautomatic shotgun	9mm SIG Sauer P226 pistol ;Savage Mark II bolt-action .22-caliber rifle; .223 Bushmaster XM15-E2S semiautomatic rifle; izhmash Saiga 12-gauge semiautomatic shotgun; 10mm Glock pistol	Yes ^w
67. Accent Signage Systems	Minneapolis, MN	9/27/12	GLOCK 19 9mm semiautomatic pistol equipped with a 15-round large capacity ammunition magazine. Engeldinger purchased the firearm one year before the shooting at KGS Guns and Ammo in Minneapolis after passing a background check and obtaining a permit to purchase. Police reportedly found packaging for 10,000 rounds of ammunition and another handgun in Engeldinger's home.	9mm Glock semiautomatic handgun	9mm glock pistol	No
68. Sikh Temple	Oak Creek, WI	8/5/12	Springfield Armory XD(M) 9mm semiautomatic handgun equipped with a 19-round large capacity ammunition magazine. Weeks before the shooting, Wade legally purchased the handgun and three 19-round large capacity ammunition magazines from a federal firearms licensed dealer in nearby West Allis, WI. According to media reports, Wade served in the U.S. Army from 1992 until 1998, when he was given an other-than-honorable discharge or general discharge. In 1994, while stationed at Fort Bliss in Texas, he was arrested by El Paso police, and pled guilty to a misdemeanor charge of criminal mischief. Federal law does not prohibit persons with convictions for misdemeanors other than domestic violence misdemeanors or persons who have been discharged from the military for reasons other than "dishonorably" from purchasing firearms.	9mm Springfield Armory XDM semiautomatic handgun	9mm springfield armory XDM pistol	No

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69. Aurora Movie Theater	Aurora, CO	7/20/12	A Smith & Wesson M&P15 assault rifle equipped with a 100-round drum large capacity ammunition magazine, a Remington Model 870 12-gauge pump shotgun, and two GLOCK .40 caliber handguns, were recovered at the scene by police. In the months leading to the shooting, Holmes purchased the weapons and 6,000-rounds of ammunition at gun shops and over the Internet. In addition to the weapons used in the shooting, Holmes booby-trapped his apartment, rigging trip wire to detonate 30 plastic shells stuffed with gunpowder, several glass jars filled with gasoline and gunpowder, and 10 gallons of gasoline in canisters.	Two .40-caliber Glock semiautomatic handguns; .223-caliber Smith & Wesson M&P15 semiautomatic rifle ; 12-gauge Remington 870 pump-action shotgun	.40-caliber glock pistol; 12-gauge pump-action Remington 870 shotgun; .223-caliber Smith & Wesson M&P15 semiautomatic AR-15-style rifle	Yes ^x
70. Seattle Café	Seattle, WA	5/30/12	-	Two .45-caliber semiautomatic handguns	.45-caliber pistol (2)	No
71. Oikos University	Oakland, CA	4/2/12	-	.45-caliber semiautomatic handgun	.45-caliber pistol	No
72. Su Jung Health Sauna	Norcross, GA	2/22/12	-	.45-caliber semiautomatic handgun	-	No
73. Seal Beach	Seal Beach, CA	10/14/11	-	.45-caliber Heckler & Koch, 9mm Springfield semiautomatic handguns; .44 Magnum Smith & Wesson revolver	-	No
74. IHOP	Carson City, NV	9/6/11	AK-47 type assault rifle equipped with a 30-round large capacity ammunition magazine. Two additional guns and two more magazines were found in his vehicle.	AK-47 Norinco Arms variant, AK-47 Romarm Cugir variant rifles ; .38-caliber Colt revolver	AK-47 variant semiautomatic rifle	Yes ^y
75. Akron	Akron, OH	8/7/11	-	-	-	No ^z
76. Forum Roller World	Grand Prairie, TX	7/23/11	-	-	-	No ^{aa}
77. Grand Rapids	Grand Rapids, MI	7/7/11	GLOCK 9mm semiautomatic pistol (unknown model) equipped with a 30-round large capacity ammunition magazine.	-	-	No
78. Family law practice	Yuma, AZ	6/2/11	-	-	-	-
79. Tucson	Tucson, AZ	1/8/11	GLOCK 19 9mm semiautomatic pistol equipped with a 33-round large capacity ammunition magazine. Loughner was also carrying two 15-round large capacity ammunition magazines, and a knife. The ATF determined Loughner legally purchased the GLOCK pistol with an extended magazine and one box of Winchester ammunition on November 30, 2010, from Sportsman's Warehouse in Tucson.	9mm Glock 19 semiautomatic handgun	9mm glock 19 pistol	No

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80. Jackson	Jackson, KY	9/11/10	-	-	-	No ^{ab}
81. City Grill	Buffalo, NY	8/14/10	-	-	9mm pistol	No
82. Hartford Beer Distributor	Manchester, CT	8/3/10	Two Ruger SR9 9mm semiautomatic pistols equipped with 17-round magazines. Thornton purchased both firearms legally from an East Windsor, CT gun dealer.	Two 9mm Ruger SR9 semiautomatic handguns	9mm Ruger SR9 pistol (2)	No
83. Yoyito Café	Hialeah, FL	6/6/10	-	-	.45-caliber Glock pistol	No ^{ac}
84. Hot Spot Café	Los Angeles, CA	4/3/10	-	-	-	No ^{ad}
85. Coffee Shop Police	Parkland, WA	11/29/09	-	9mm Glock 17 semiautomatic handgun; .38-caliber Smith & Wesson revolver	.38-caliber Smith & Wesson revolver; 9mm Glock 17 pistol	No
86. Fort Hood	Fort Hood, TX	11/5/09	FN Herstal 5.7 Tactical Pistol equipped with 20-round large capacity ammunition magazine. When Hasan was apprehended, investigators found in his possession 177-rounds in 30-round and 20-round large capacity ammunition magazines, another handgun, a revolver, and two gunsights (for different lighting conditions). Hasan purchased the FN Herstal 5.7 Tactical Pistol legally at Guns Galore, a shop in Killeen, TX	FN Five-seven semiautomatic handgun	FN Five-seven pistol	No
87. Worth Street	Mount Airy, NC	11/1/09	-	-	High-powered assault-style rifle	Yes
88. Binghamton	Binghamton, NY	4/3/09	Beretta .45-caliber semiautomatic pistol, Beretta 9mm semiautomatic pistol (models unknown), and two 30-round large capacity ammunition magazines and two 15-round large capacity ammunition magazines.	9mm Beretta, .45-caliber Springfield semiautomatic handguns	9mm Beretta pistol; .45-caliber Springfield pistol	No
89. Carthage Nursing Home	Carthage, NC	3/29/09	-	Winchester 1300 pump-action shotgun; .357 Magnum revolver	.357 magnum revolver; Winchester 1300 pump-action shotgun	No
90. Skagit County	Alger, WA	9/2/08	-	-	lever-action winchester rifle, handgun	No
91. Atlantis Plastics	Henderson, KY	6/25/08	-	.45-caliber Hi-Point semiautomatic handgun	.45-caliber Hi-Point pistol	No
92. Black Road Auto	Santa Maria, CA	3/18/08	-	-	semiautomatic handgun	No

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
93. Northern Illinois University	DeKalb, IL	2/14/08	SIG SAUER Kurz 9mm semiautomatic pistol, Hi-Point CF380 .380 caliber semiautomatic pistol, GLOCK 19 9mm semiautomatic pistol, Remington Sportsman 48 12-gauge shotgun, and 33-round and 15-round large capacity ammunition magazines. Kazmierczak purchased all four weapons from Tony's Gun & Ammo in Champaign, IL between August 3, 2007 and February 9, 2008. Kazmierczak also purchased gun accessories from a website operated by TGSCOM, Inc., the same company patronized by the VA Tech shooter.	9mm Glock 19, Hi-Point CF380, 9mm Kurz SIG Sauer P232 semiautomatic handguns; 12-gauge Remington Sportsman 48 sawed-off shotgun	12-gauge Remington Sportsman 48 sawed-off shotgun; 9mm glock 19 pistol; 9mm Kurz SIG Sauer P232 pistol; Hi-Point CF380 pistol	No ^{ae}
94. Kirkwood City Council	Kirkwood, MO	2/7/08	-	.40-caliber Smith & Wesson semiautomatic handgun; .44 Magnum Smith & Wesson Model 29 revolver	.40-caliber Smith & Wesson pistol; .44 Magnum Smith & Wesson Model 29 revolver	No
95. Youth With a Mission and New Life Church	Colorado Springs, CO	12/9/07	-	-	A pistol, .223-caliber Bushmaster XM16 rifle , .40-caliber Beretta pistol	Yes
96. Westroads Mall	Omaha, NE	12/5/07	WASR-10 semiautomatic assault rifle and two 30-round large capacity ammunition magazines.	WASR-10 Century Arms semiautomatic rifle	WASR-10 Century Arms semiautomatic rifle	Yes ^{af}
97. Crandon	Crandon, WI	10/7/07	-	AR-15 SWAT semiautomatic rifle	AR-15-style semiautomatic rifle	- ^{ag}
98. Virginia Tech	Blacksburg, VA	4/16/07	GLOCK 19 9mm semiautomatic pistol and Walther P22 .22-caliber semiautomatic pistol. Investigators found a total of 17 empty magazines at the scene of the shooting, a mix of several 15-round, and 10-round magazines loaded with hollow-point rounds (bullets with the tip hollowed out, designed to expand upon impact). He possessed over 400 rounds of ammunition. Cho ordered the Walther P22 from a website operated by TGSCOM, Inc. Kazmierczak patronized the same company before the NIU shooting. On February 9, 2007, Cho picked up the pistol from J-N-D Pawn-brokers, located across the street from the VA Tech campus. In compliance with the state law limiting handgun purchases to one every 30 days, Cho purchased the GLOCK 19 on March 13, 2007. He also purchased five 10-round magazines from eBay in March. Cho's purchase of these firearms was in violation of federal law; he was disqualified from purchasing or possessing a firearm and ammunition, because a special justice of the Montgomery County General District Court had found him to be a danger to himself on December 14, 2005.	9mm Glock 19, .22-caliber Walther P22 semiautomatic handguns	.22-caliber Walther P22 pistol; 9mm Glock 19 pistol	No

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
99. Trolley Square	Salt Lake City, UT	2/12/07	-	Mossberg Maverick 88 Field shotgun; .38-caliber Smith & Wesson M36 revolver	.38-caliber Smith & Wesson M36 revolver; Mossberg Maverick 88 Field shotgun	No
100. Amish School	Lancaster County, PA	10/2/06	-	Springfield semiautomatic handgun; .30-06 Ruger bolt-action rifle; 12-gauge Browning pump-action shotgun	12-gauge Browning pump-action shotgun; .30-06 Ruger bolt-action rifle; Springfield 9mm semiautomatic handgun	No ^{ah}
101. The Ministry of Jesus Christ	Baton Rouge, LA	5/21/06	-	-	-	No ^{ai}
102. Capitol Hill	Seattle, WA	3/25/06	-	.40-caliber Ruger, one other semiautomatic handgun; Bushmaster XM15 E2S semiautomatic rifle ; 12-gauge Winchester Defender pump-action shotgun with extended tube and pistol grip	12-gauge pump-action Winchester Defender shotgun; .40-caliber Ruger pistol	Yes ^{aj}
103. Goleta Postal	Goleta, CA	1/30/06	Smith & Wesson 915 9mm semiautomatic handgun equipped with a 15-round large capacity ammunition magazine. San Marco purchased the firearm at a pawn shop in New Mexico in August 2005.	9mm Smith & Wesson 915 semiautomatic handgun	9mm Smith & Wesson 915 pistol	No
104. Sash Assembly of God	Sash, TX	8/29/05	-	-	9mm semiautomatic pistol, .38-caliber revolver	No
105. Red Lake	Red Lake, MN	3/21/05	-	.40-caliber Glock 23, .22-caliber Ruger semiautomatic handguns; 12-gauge Remington 870 shotgun	.22-caliber Ruger pistol (2); 12-gauge Remington 870 shotgun	No
106. Living Church of God	Brookfield, WI	3/12/05	-	9mm Beretta semiautomatic handgun	9mm beretta pistol	No
107. Fulton County Courthouse	Atlanta, GA	3/11/05	-	-	9mm pistol	No
108. Damageplan Show	Columbus, OH	12/8/04	-	9mm Beretta 92FS semiautomatic handgun	9mm beretta 92FS pistol	No
109. Hunting Camp	Meteor, WI	11/21/04	SKS 7.62mm semiautomatic assault rifle equipped with a 20-round large capacity ammunition magazine.	-	7.62mm SKS semiautomatic rifle	Yes ^{ak}
110. ConAgra Foods Plant	Kansas City, KS	7/3/04	-	-	9mm pistol, revolver	No
111. Stateline Tavern	Oldtown, ID	10/24/03	-	-	semiautomatic pistol	No
112. Windy City Warehouse	Chicago, IL	8/27/03	-	-	.38-caliber Walther pistol	No ^{al}

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
113. Lockheed Martin	Meridian, MS	7/8/03	-	.45-caliber Ruger P90 semiautomatic handgun; .22-caliber rifle with scope, .223-caliber Ruger Mini-14 rifle; 12-gauge Winchester 1300 shotgun; .22 Magnum derringer	.223-caliber Ruger Mini-14 rifle; 12-gauge Winchester 1300 shotgun	No am
114. Labor Ready	Huntsville, AL	2/25/03	-	-	semiautomatic 9mm pistol	No
115. Bertrand Products	South Bend, IN	3/22/02	-	-	.22-caliber rifle, sawed-off shotgun	No
116. Burns International Security	Sacramento, CA	9/10/01	-	-	AK-47-type semiautomatic rifle , 9mm pistol	Yes an
117. Bookcliff RV Park	Rifle, CO	7/3/01	-	-	.38 caliber Charter Arms revolver	No
118. Navistar	Melrose Park, IL	2/5/01	-	SKS 1954R, .30-caliber Winchester rifles; 12-gauge Remington pump-action shotgun; .38-caliber revolver	12-gauge Remington pump-action shotgun; SKS 1954R rifle; .30-caliber Winchester rifle; .38-caliber revolver;	No ao
119. Houston	Houston, TX	1/9/01	-	-	-	No ap
120. Wakefield	Wakefield, MA	12/26/00	AK-47-type semiautomatic assault rifle , unknown make and model 12-gauge shotgun, unknown make and model .32-caliber semiautomatic pistol, and 60-round large capacity ammunition magazine.	.32-caliber Retolaza semiautomatic handgun; AK-47 variant semiautomatic rifle ; 12-gauge Winchester 1300 pump-action shotgun	.32-caliber Retolaza pistol; AK-47 variant semiautomatic rifle; 12-gauge Winchester 1300 pump-action shotgun	- aq
121. Mount Lebanon	Pittsburgh, PA	4/28/00	-	-	.357 Magnum revolver	No
122. Mi-T-Fine Car Wash	Irving, TX	3/20/00	-	-	semiautomatic .9mm pistol	No
123. Hotel	Tampa, FL	12/30/99	-	9mm Lorcin semiautomatic handgun; .38-caliber Charter Arms revolver	.38-caliber Charter Arms revolver; 9mm Lorcin pistol	No
124. Xerox	Honolulu, HI	11/2/99	GLOCK 17 9mm semiautomatic pistol and three 17-round large capacity ammunition magazines, loaded with hollow point bullets (bullets with the tip hollowed out, designed to expand upon impact). Uyesugi legally purchased the GLOCK in 1989.	9mm Glock 17 semiautomatic handgun	9mm Glock 17 pistol	No
125. Wedgwood Baptist Church	Fort Worth, TX	9/15/99	Ruger P85 9mm semiautomatic pistol, unknown make and model .380 caliber semiautomatic pistol, and three 15-round large capacity ammunition magazines. Ashbrook legally acquired both weapons from federally licensed firearms dealers in 1992.	.380-caliber, 9mm Ruger P85 semiautomatic handguns	.380-caliber revolver; 9mm Ruger P85 pistol	No

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
126. Atlanta Day Trading	Atlanta, GA	7/29/99	-	.45-caliber Colt 1911-A1, 9mm Glock 17, .25-caliber Raven Arms MP-25 semiautomatic handguns; .22-caliber Harrington & Richardson revolver	.45-caliber Colt 1911-A1 pistol; .22-caliber Harrington & Richardson revolver; .25-caliber Raven Arms Mp-25 pistol; 9mm Glock 17 pistol	No
127. Albertson's Supermarket	Las Vegas, NV	6/3/99	-	-	12-gauge pump-action shotgun	No
128. Columbine High School	Littleton, CO	4/20/99	Savage Springfield 67H 12-gauge pump-action shotgun, Savage Stevens 311D 12-gauge sawedoff shotgun, Hi-Point 995 9mm semiautomatic rifle, INTRATEC TEC-DC9 9mm semiautomatic pistol , and thirteen 10-round magazines, one 52-, one 32-, one 28-round large capacity ammunition magazines. Harris and Klebold illegally acquired the shotguns and Hi- Point rifle through a "straw purchase" (a transaction in which a legal buyer makes a purchase for someone who cannot legally purchase the firearm). Their friend, Robyn Anderson, purchased the three firearms at the Tanner Gun Show from unlicensed sellers in December of 1998. A pizza shop employee, Mark Manes, illegally sold them the INTRATEC TEC-DC9.	9mm Intratec DC-9 semiautomatic handgun; 9mm Hi-Point 995 carbine rifle ; 12-gauge sawed-off Savage Stevens 311D, 12-gauge sawed-off Savage Springfield 67H pump-action shotguns	9mm Hi-Point 995 carbine ; 12-gauge sawed-off Savage Stevens 311D shotgun; 12-gauge sawed-off Savage Springfield 67H pump-action shotgun; 9mm Intratec DC-9 machine pistol	Yes ar
129. New St. John Fellowship Baptist Church	Gonzalez, LA	3/10/99	-	-	semiautomatic pistol	No
130. Thurston High School	Springfield, OR	5/21/98	GLOCK 19 9mm semiautomatic pistol, Ruger (unknown model) .22-caliber semiautomatic pistol, Ruger (unknown model) .22-caliber rifle, and a 50-round large capacity ammunition magazine. The GLOCK and rifle were legally purchased by Kinkel's father.	9mm Glock, .22-caliber Ruger semiautomatic handguns, .22-caliber Ruger rifle	9mm Glock pistol; .22-caliber Ruger pistol; .22-caliber Ruger rifle	No as
131. Westside Middle School	Jonesboro, AR	3/24/98	Universal M1 Carbine .30-caliber replica, Davis Industries .38-caliber two-shot derringer, Double Deuce Buddie .22-caliber two-shot derringer, Charter Arms .38-caliber revolver, Star .380-caliber pistol, FIE .380-caliber pistol, Ruger Security Six .357-caliber revolver, Ruger .44 magnum rifle, Smith & Wesson .38-caliber revolver, Remington 742 .30-06-caliber rifle, 15-round large capacity ammunition magazines, three 30-round large capacity ammunition magazines, and over 150-rounds of ammunition.	FIE 380, .380-caliber Star semiautomatic handguns; .44 Magnum Ruger, .30-06 Remington 742, .30-caliber Universal M-1 carbine replica rifles; .38-caliber Charter Arms, .357-caliber Ruger Security Six, .38-caliber Smith & Wesson revolvers; .22-caliber Double Deuce Buddie two-shot, .38-caliber Davis Industries two-shot derringers	.22-caliber Double Deuce revolver; .380-caliber Star pistol; .357-caliber Ruger Security six revolver; .44 Magnum Ruger revolver; .30-caliber Universal M-1 carbine; .38-caliber Charter Arms revolver; .38-caliber Smith & Wesson revolver; FIE 380 pistol; .30-06 Remington 742 rifle	No at

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
132. Connecticut Lottery	Newington, CT	3/6/98	GLOCK model unknown 9mm semiautomatic pistol equipped with a 19-round large capacity ammunition magazine. Beck had a permit for the 9mm pistol used in the shooting.	9mm semiautomatic handgun	9mm pistol	No
133. Caltrans Maintenance Yard	Orange, CA	12/18/97	Chinese-made AK-47-type 7.62mm semiautomatic assault rifle and five 30-round large capacity ammunition magazines. Torres legally purchased the rifle on April 30, 1988, from B&B Gun Sales in Orange County, CA.	7.62mm AK-47 Chinese variant semiautomatic rifle	7.62mm AK-47 Chinese variant semiautomatic rifle	Yes
134. Erie Manufacturing	Bartow, FL	12/3/97	-	-	-	No ^{au}
135. R.E. Phelon Company	Aiken, SC	9/15/97	-	9mm semiautomatic handgun	9mm pistol	No
136. News and Sentinel	Colebrook, NH	8/20/97	-	-	9mm pistol, AR-15-style rifle	Yes ^{av}
137. Fire Station	Jackson, MS	4/25/96	-	-	Mac 11 machine pistol, Tec 9 automatic pistol, .45-caliber semiautomatic handgun	No
138. Fort Lauderdale	Fort Lauderdale, FL	2/9/96	-	9mm Glock semiautomatic handgun; .32-caliber revolver	9mm Glock pistol; .32-caliber revolver	No
139. Little Chester Shoes	New York, NY	12/19/95	-	-	.9mm semiautomatic pistol	No
140. Piper Technical Center	Los Angeles, CA	7/19/95	-	-	Glock semiautomatic pistol	No ^{aw}
141. Walter Rossler Company	Corpus Christi, TX	4/3/95	-	9mm Ruger semiautomatic handgun; .32-caliber revolver	.32-caliber revolver; 9mm Ruger pistol	No
142. Puppy creek	Hoke County, NC	12/31/94	-	-	-	-
143. Air Force Base	Fairchild Base, WA	6/20/94	Chinese-made Mak-90 semiautomatic assault rifle equipped with a 75-round drum large capacity ammunition magazine. He purchased the assault rifle on June 15, 1994, five days before the shooting, and the following day purchased 80 rounds of 7.62x39mm ammunition and a 75-round drum large capacity ammunition magazine.	MAK-90 semiautomatic rifle	MAK-90 semiautomatic AK-style rifle	Yes ^{ax}
144. Chuck E. Cheese	Aurora, CO	12/14/93	-	.25-caliber semiautomatic handgun	.25-caliber pistol	No
145. Long Island Railroad	Garden City, NY	12/7/93	Ruger P89 9mm semiautomatic pistol and four 15-round large capacity ammunition magazines. Ferguson legally acquired the weapon in California at an outlet of Turner's Outdoorsman.	9mm Ruger P89 semiautomatic handgun	9mm Ruger P89 pistol	No
146. Unemployment Office	Oxnard, CA	12/2/93	-	-	Rifle	-
147. Family Fitness Club	El Cajon, CA	10/14/93	-	-	12-gauge shotgun	No

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
148. Luigi's Restaurant	Fayetteville, NC	8/6/93	-	.22-caliber rifle; two 12-gauge shotguns	12-gauge shotgun (2); .22-caliber rifle	No ay
149. Washington County Bar	Jackson, MS	7/8/93	-	-	-	-
150. 101 California Street	San Francisco, CA	7/1/93	Two INTRATEC TEC-DC9 semiautomatic pistols , Colt (unknown model) .45-caliber semiautomatic pistol, and 40-round and 50-round large capacity ammunition magazines loaded with a mix of Black Talon and standard ammunition. According to the Las Vegas Metropolitan Police Department, Ferri purchased the pistols from two stores in Las Vegas: Super Pawn and Pacific Tactical Weapons.	Two Intratec DC-9 , .45-caliber Colt semiautomatic handguns	.45-caliber Colt pistol; Intratec DC-9 machine pistols	Yes az
151. Card club	Paso Robles, CA	11/8/92	-	-	-	No ba
152. Watkins Glen	Watkins Glen, NY	10/15/92	-	9mm Llama semiautomatic handgun	9mm Llama pistol	No
153. Lindhurst High School	Olivehurst, CA	5/1/92	-	.22-caliber sawed-off rifle; 12-gauge pump-action shotgun	.22-caliber sawed-off rifle; 12-gauge pump-action shotgun	No bb
154. Phoenix	Phoenix, AZ	3/15/92	-	-	-	-
155. Royal Oak Postal	Royal Oak, MI	11/14/91	-	.22-caliber Ruger sawed-off semiautomatic rifle	.22-caliber Ruger sawed-off semiautomatic rifle	No bc
156. Restaurant	Harrodsburg, KY	11/10/91	-	-	.357 Magnum	No
157. University of Iowa	Iowa City, IA	11/1/91	-	.38-caliber Taurus revolver	.38-caliber Taurus revolver	No
158. Luby's Cafeteria	Killeen, TX	10/16/91	GLOCK 17 9mm semiautomatic pistol, Ruger P89 semiautomatic pistol, and 17-round and 15- round large capacity ammunition magazines. Hennard legally purchased the weapons from Mike's Gun Shop in Henderson, NV, in February and March of 1991.	9mm Glock 17, 9mm Ruger P89 semiautomatic handguns	9mm Glock 17 pistol; 9mm Ruger P89 pistol	No
159. Post office	Ridgewood, NJ	10/10/91	-	-	9mm Uzi machine pistol , .22-caliber machine gun	Yes br
160. GMAC	Jacksonville, FL	6/18/90	Universal M1 .30-caliber semiautomatic assault rifle, unknown make and model .38-caliber revolver, and a 30-round large capacity ammunition magazine.	.30-caliber Universal M1 carbine rifle; .38-caliber revolver	.30-caliber Universal M1 carbine; .38-caliber revolver	No bd
161. Standard Gravure Corporation	Louisville, KY	9/14/89	Chinese-made AK-47-type semiautomatic assault rifle , two INTRATEC MAC-11 semiautomatic assault pistols, SIG SAUER unknown model 9mm semiautomatic pistol, unknown make and model .38-caliber revolver, and 30-round large capacity ammunition magazines. Wesbecker legally purchased the AK-47-type assault rifle from Tilford's Gun Sales in Louisville.	Two Intratec MAC-11, 9mm SIG Sauer semiautomatic handguns; AK-47 Chinese variant semiautomatic rifle ; .38-caliber revolver	9mm SIG Sauer pistol; AK-47 Chinese variant semiautomatic rifle ; Intratec MAC-11 machine pistol; .38-caliber revolver; 9mm SIG Sauer pistol	Yes

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			Weapon Description From			Assault	
Case	Location	Date	Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	Weapon? ^d	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
162.	Stockton Schoolyard	Stockton, CA	1/17/89	Chinese-made AK-47-type semiautomatic assault rifle, Taurus unknown model 9mm semiautomatic pistol, a 75-round large capacity ammunition drum magazine, a 75-round large capacity ammunition rotary magazine, and four 35-round large capacity ammunition banana magazines. Purdy legally purchased the AK-47-type rifle at Sandy Trading Post, in Sandy, OR on August 3, 1988, and the Taurus 9mm pistol at Hunter Loan and Jewelry Co. in Stockton, CA on December 28, 1988.			Yes
163.	Montefiore School	Chicago, IL	9/22/88	-	-	.38-caliber revolver	No
164.	Old Salisbury Road	Winston-Salem, NC	7/17/88	-	-	.22-caliber rifle	No
165.	ESL	Sunnyvale, CA	2/16/88	-	.380 ACP Browning, 9mm Smith & Wesson semiautomatic handguns; Ruger M-77 .22-250 bolt-action rifle with scope; Mossberg 12-gauge pump-action, 12-gauge Benelli semiautomatic shotguns; .357 Magnum Smith & Wesson, .22 Sentinel WMR revolvers	.22 Sentinel WMR revolver; 9mm Smith & Wesson pistol; Mossberg 12-gauge pump-action shotgun; Ruger M-77 .22-250 bolt-action rifle with scope; .380 AP Browning pistol; 12-gauge Benelli semiautomatic shotgun; .357 Magnum Smith & Wesson revolver;	No be
166.	Shopping Centers	Palm Bay, FL	4/23/87	Strum, Ruger Mini-14 semiautomatic assault rifle equipped with a 30-round large capacity ammunition magazine, five 30-round large capacity ammunition magazines, 180 rounds of ammunition, a shotgun (unknown make and model), and a pistol (unknown make and model). Cruse ordered the assault rifle on March 21, 1987. On April 17, 1987, he purchased 100-rounds of ammunition and six 30-round large capacity ammunition magazines.	Sturm, Ruger Mini-14 semiautomatic rifle; 20-gauge Winchester pump-action shotgun; .357 Ruger Blackhawk revolver	.357 Ruger Blackhawk revolver; Ruger Mini-14 semiautomatic rifle; Sturm; 20-gauge Winchester pump-action	No bf
167.	United States Postal Service	Edmond, OK	8/20/86	-	.22-caliber, two .45-caliber Colt Model 1911-A1 semiautomatic handguns	.45-caliber Colt Model 1911-A1 pistol; .45-caliber Colt Model 1911-A1 pistol; .22-caliber pistol	- bg
168.	Anchor Glass Container Corporation	South Connellsville, PA	3/16/85	-	-	.38-caliber snub-nosed revolver	No
169.	Other Place Lounge	Hot Springs, AR	7/24/84	-	-	.45-caliber semiautomatic pistol	No

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
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(1)	(2)	(3)	(4)	(5)	(6)	(7)
170. San Ysidro McDonald's	San Ysidro, CA	7/18/84	-	9mm Browning P35 Hi-Power semiautomatic handgun; 9mm Israeli Military Industries Uzi Model A carbine semiautomatic rifle ; 12-gauge Winchester 1200 pump-action shotgun	9mm Israeli Military industries Uzi Model A machine pistol , 12-gauge Winchester 1200 pump-action shotgun, 9mm Browning P35 Hi-Power pistol	Yes
171. Dallas Nightclub	Dallas, TX	6/29/84	-	9mm Smith & Wesson 459 semiautomatic handgun	9mm Smith & Wesson 459 pistol	No ^{bh}
172. Alaska Mining Town	Manley Hot Springs, AK	5/17/84	-	-	.30-06-caliber Ruger single-shot rifle	No
173. College Station	College Station, TX	10/11/83	-	-	-	No ^{bi}
174. Alaska Back-County	McCarthy, AK	3/1/83	-	-	.223-caliber Ruger Mini-14 semiautomatic rifle, .22-caliber pistol	No
175. Upper West Side Hotel	New York, NY	2/3/83	-	-	-	No ^{bj}
176. The Investor	Noyes Island, AK	9/6/82	-	-	.22-caliber	No
177. Welding Shop	Miami, FL	8/20/82	-	Mossberg 500 Persuader pump-action shotgun with pistol grip	12-gauge shotgun	No
178. Western Transfer Co.	Grand Prairie, TX	8/9/82	-	-	.38-caliber revolver, .25-caliber semiautomatic pistol, carbine rifle	No
179. Russian Jack Springs Park	Anchorage, AK	5/3/82	-	-	.38-caliber pistol	No

Notes and Sources:

Public Mass Shootings from Mother Jones ("US Mass Shootings, 1982-2022: Data from Mother Jones' Investigation," updated November 23, 2022), the Citizens Crime Commission of New York City ("Mayhem Multiplied: Mass Shooters and Assault Weapons," February 2018 update, and "Citizens Crime Commission of New York City, Mass Shooting Incidents in America (1984-2012)," accessed June 1, 2017), Washington Post ("The Terrible Numbers That Grow With Each Mass Shooting," updated May 12, 2021) and The Violence Project ("Mass Shooter Database," updated May 14, 2022). Identified Assault Weapons are in bold.

^a Description of weapons from "Citizens Crime Commission of New York City, Mass Shooting Incidents in America (1984-2012)," accessed June 1, 2017,

^b Description of weapons from Mother Jones ("US Mass Shootings, 1982-2022: Data from Mother Jones' Investigation," updated November 23, 2022).

^c Description of weapons from Washington Post ("The Terrible Numbers That Grow With Each Mass Shooting," updated May 12, 2021).

^d California Penal Code sections 30510 and 30515 and California Code of Regulations, title 11, section 5499.

^{ca} "House Investigative Committee on the Robb Elementary Shooting Texas House of Representatives Interim Report 2022," July 17, 2022; "DDM4 V7", *Daniel Defense*, <https://danieldefense.com/ddm4-v7.html>, accessed

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		January 4, 2023.				
cb		"Sheriff: Oxford High School shooter used 9 mm pistol recently purchased by father," <i>ClickOnDetroit</i> , December 1, 2021; "SP2022 Nitron Carry," <i>Sig Sauer</i> , https://www.sigsauer.com/sp2022-nitron-carry-size.html , accessed January 4, 2023.				
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j		"Suspect in quadruple killing at car wash dies," <i>CNN</i> , January 30, 2018.				
k		"California mass shooter made his own rifles," <i>NBC News</i> , November 16, 2017; "California shooter built his own illegal guns, officials say," <i>USA Today</i> , November 15, 2017.				
l		"What we know about the rifle used in the Texas church massacre," <i>CNN</i> , November 6, 2017; "The Latest: 2 men who pursued gunman attend shooting vigil," <i>The Associated Press</i> , November 6, 2017; "Ruger AR-556," Ruger, https://ruger.com/products/ar556/specSheets/8500.html , accessed October 22, 2018.				
m		"List: Guns and evidence from Las Vegas shooter Stephen Paddock," <i>KTNV</i> , January 19, 2018; "47 guns, loaded high-capacity magazines found in Vegas shooter's hotel suite and Nevada home," <i>ABC News</i> , October 4, 2017; "The 'tricked out' guns Las Vegas shooter used in massacre," <i>New York Post</i> , October 3, 2017.				
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o		"Exclusive: Photo of the Saiga AK-74 Rifle Used at Dallas Shooting," <i>Law Officer</i> , July 10, 2016.				

Exhibit C

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Case	Location	Date	Weapon Description From			Assault Weapon? ^d
			Citizens Crime Commission ^a	Mother Jones ^b	Washington Post ^c	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
P			"Sig MCX Owners Manual: Handling & Safety Instructions," <i>Sig Sauer</i> , https://www.sigsauer.com/wp-content/uploads/2016/07/MCX.pdf , accessed October 23, 2018; Sig Sauer website, https://www.sigsauer.com/products/firearms/rifles/?state_compliant=1103 , accessed October 24, 2018.			
Q			"San Bernardino Guns Originally Bought Legally, Later Modified," <i>The Wall Street Journal</i> , December 4, 2015.			
R			"Umpqua Community College 2015 shooting report: What we've learned," <i>The Oregonian</i> , September 8, 2017.			
S			"Chattanooga Shooting Reignites Gun Control Debate After Mohammad Youssef Abdulazeez Used AK-47 Assault Weapon To Kill Marines," <i>International Business Times</i> , July 17, 2015; "Purple Hearts just approved for Marines and sailor targeted in Chattanooga attack," <i>The Washington Post</i> , December 17, 2015.			
T			"John Zawahri, suspected gunman in deadly Santa Monica shooting, left farewell note, police say," <i>CBS News</i> , June 14, 2013.			
U			"Names of victims emerge after deadly Federal Way shooting," <i>Federal Way Mirror</i> , April 24, 2013.			
V			"Upstate New York Shooting Update: Kurt Myers, suspected gunman, killed by police in shootout," <i>CBS News</i> , March 14, 2013.			
W			"Fate of Sandy Hook lawsuit against gun maker could be decided by a slingshot," <i>NBC News</i> , November 14, 2017; "Embargo firing a run on Russian-made guns: Added restrictions put arms in short supply," <i>San Antonio Express-News</i> , August 11, 2014.			
X			"Aurora Gunman's Arsenal: Shotgun, Semiautomatic Rifle and, at the End, a Pistol," <i>New York Times</i> , July 24, 2012; "M&P15 Centerfire Rifles Safety & Instruction Manual," <i>Smith & Wesson</i> , https://www.smith-wesson.com/sites/default/files/owners-manuals/M%26P15_CF_Rifle_Manual_10-20-15.pdf , accessed October 25, 2018.			
Y			"IHOP gunman used illegally altered AK-47, sheriff says," <i>Las Vegas Review-Journal</i> , October 5, 2011.			
Z			"The mass killer, the cop and the armed citizen.(THE AYOOB FILES)," <i>The American Handgunner</i> , November 1, 2013.			
aa			"6 Killed In Grand Prairie Roller Rink Shooting," <i>CBS DFW</i> , July 23, 2011.			
ab			"Kentucky Tragedy: Man Kills Wife, Five Others, in Rampage Over Cold Eggs, Say Cops," <i>CBS News</i> , September 13, 2010.			
ac			"Hialeah: Only the Latest Mass Shooting by a Concealed Carry Killer," <i>Huffington Post</i> , July 30, 2013; "Hialeah gunman's rage over estranged wife leaves 5 dead," <i>Sun Sentinel</i> , June 7, 2010.			
ad			"Man convicted of killing 4 at Los Angeles restaurant," <i>Associated Press</i> , March 15, 2016.			
ae			"Instructions for Operation and Care of the Remington Model 11-'48, Sportsman-'48 Autoloading Shotguns," https://www.remington.com/sites/default/files/Model%2011-48.pdf , accessed October 24, 2018.			
af			"Images, suicide note released in mall massacre," <i>Nation World News</i> , December 7, 2007; "Romanian Kalashnikov Rifles," <i>guns.net</i> , accessed at http://www.gunsnet.net/Linx310/model.htm on July 28, 2005 via the Internet Archive WayBack Machine (accessed September 26, 2018).			
ag			"What happened in Crandon on Oct. 7," <i>Los Angeles Times</i> , June 8, 2008.			
ah			"Firearms Tutorial: Terminology," https://library.med.utah.edu/WebPath/TUTORIAL/GUNS/GUNTERM.html , accessed October 24, 2018.			

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ai			"5 Dead After Louisiana Church Shooting," <i>New York Times</i> , May 21, 2006.			
aj			"Police: Seattle shooter said 'plenty for everyone'," <i>NBC News</i> , March 27, 2006.			
ak			"Both sides cite anger, hostility in killings; Hearings begin with law officers' testimony, grisly images," <i>Pioneer Press</i> , September 11, 2005.			
al			"Seven die in Chicago warehouse shooting," <i>CNN</i> , August 27, 2003.			
am			"Man Kills 5 Co-Works at Plant and Himself," <i>New York Times</i> , July 9, 2013; "Instruction Manuals & Product History," <i>Ruger</i> , https://ruger.com/service/productHistory.html , accessed October 23, 2018; Ruger Mini-14 manuals https://ruger-docs.s3.amazonaws.com/_manuals/mini14-180.pdf , https://ruger-docs.s3.amazonaws.com/_manuals/mini14-181-186.pdf , https://ruger-docs.s3.amazonaws.com/_manuals/mini14-580.pdf , accessed October 23, 2018; "What You Should Know About .22 Rimfire," <i>NRA</i> , August 16, 2017; Ruger Homepage, https://ruger.com/ , accessed October 24, 2018.			
an			"Sacramento shooter unscathed before killing self, autopsy shows," <i>Associated Press</i> , September 14, 2001.			
ao			"Workplace Deaths Leave No One Untouched," <i>Chicago Tribune</i> , February 7, 2001; "Update 1-Source of guns used in US factory shootings sought," <i>Associated Press</i> , February 6, 2011; "SKS Rifle: Simonov Type 56," Department of the Army, October 1969, http://pdf.textfiles.com/manuals/FIREARMS/sks_56.pdf , accessed October 24, 2018; "Why .30-30 Winchester Will Never Die," <i>NRA</i> , February 2, 2016; "Firearms Tutorial: Terminology," https://library.med.utah.edu/WebPath/TUTORIAL/GUNS/GUNTERM.html , accessed October 24, 2018.			
ap			"Houston Rampage Leaves 4 Victims, Gunman Dead," <i>The Record</i> , January 10, 2001.			
aq			"Man Charged in Killings Evaded Strict Gun Laws," <i>New York Times</i> , December 28, 2000.			
ar			"How they were equipped that day," <i>Jefferson County Sheriff</i> , http://www.cnn.com/SPECIALS/2000/columbine.cd/Pages/EQUIPMENT_TEXT.htm , accessed September 26, 2018.			
as			"What You Should Know About .22 Rimfire," <i>NRA</i> , August 16, 2017, <i>Kipland Philip Kinkel v. Rob Persson</i> , 13C13698;A155449 (2018); Ruger Homepage, https://ruger.com/ , accessed October 24, 2018.			
at			"Powerful, semiautomatic rifles in Jonesboro killers' arsenal," <i>Associated Press</i> , April 3, 1998; "Post WWII Commercially Manufactured M1 Carbines," <i>Universal Firearms</i> , http://www.m1carbinesinc.com/carbine_universal.html , accessed September 26, 2018; "77-Series Ruger 77/44," <i>Ruger</i> , https://ruger.com/products/77Series7744/models.html , accessed October 24, 2018; "Model 742," <i>Remington</i> , https://www.remington.com/sites/default/files/Model742.pdf , accessed October 24, 2018.			
au			"Unfinished business," <i>Dateline NBC</i> , December 21, 2006.			
av			"Explosive hoarded by killed of 4," <i>Chicago Tribune</i> , August 21, 1997			
aw			"High-Capacity Ammunition Magazines are the Common Thread Running Through Most Mass Shootings in the United States," <i>Violence Policy Center</i> , accessed September 9, 2018.			
ax			"An Airman's Revenge: 5 Minutes of Terror," <i>The New York Times</i> , June 22, 1994.			
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az			"San Francisco massacre prompts families' suits," <i>The Las Vegas Review-Journal</i> , May 19, 1994; "Death Over the Counter," <i>The Washington Post</i> , July 27, 1993; "TEC-DC9 Manual," <i>Intratec Firearms</i> ,			

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http://pdf.textfiles.com/manuals/FIREARMS/intratec_tec_dc9.pdf, accessed October 22, 2018.

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bj "Gunman kills four and wounds a fifth at west side hotel," *The New York Times*, February 4, 1983.